

**PAKISTAN**

**PROGRAM-FOR-RESULTS**

**Punjab Jobs and Competitiveness**

**Environmental and Social Systems Assessment  
(ESSA)**

**World Bank**

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## **ABBREVIATIONS AND ACRONYMS**

BOD	Biochemical Oxygen Demand
BoR	Board of Revenue
BOM	Board of Management
CDM	Cleaner Development Mechanism
CETP	Combined Effluent Treatment Plant
COD	Chemical Oxygen Demand
CPC	Cleaner Production Center
CPI	Cleaner Production Institute
DB	Doing Business
DLI	Disbursement Linked Indicator
DMP	Disaster Management Plan
DO	Dissolved Oxygen
DPAC	District Price Assessment Committee
DVC	District Vigilance Committee
ECA	Employment of Child Act
EMC	Environmental Management Company
EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPD	Environmental Protection Department
ERMC	Environmental Research and Monitoring Center
ESSA	Environmental and Social Systems Assessment
ET	Environmental Tribunal
EU	European Union
FIEDMC	Faisalabad Industrial Estate Development and Management Company
GRM	Grievance Redress Mechanism
GRO	Grievance Redress Officer
GSP	General System of Preferences
HR	Human Resources
HSE	Health, Safety and Environment
ICRU	Investment Climate Reform Unit

ICT	Information and Communication Technology
IE	Industrial Estate
IEE	Initial Environmental Examination
ILO	International Labor Organization
J&C	Jobs and Competitiveness
LAA	Land Acquisition Act
ML&I	Monitoring, Laboratories and Implementation
MIE	Multan Industrial Estate
MIS	Management Information System
NEQS	National Environmental Quality Standards
NGO	Nongovernmental Organization
NOC	No Objection Certificate
O&M	Operation and Maintenance
PBIT	Punjab Board of Investment and Trade
P&D	Planning and Development
Pak-EPA	Pakistan Environmental Protection Agency
PAP	Program Action Plan
PCR	Physical Cultural Resources
PCS	Punjab Conservation Strategy
PDO	Program Development Objective
PEPA	Punjab Environmental Protection Act
PEPC	Punjab Environmental Protection Council
PforR	Program for Results
PGS	Punjab Growth Strategy
PIEDMC	Punjab Industrial Estate Development and Management Company
PISD	Program for Industrial Sustainable Development
PPP	Public-Private Partnership
PRMP	Punjab Resource Management Program
PSDF	Punjab Skills Development Fund
PSIC	Punjab Small Industries Corporation
PWEP	Punjab Women Empowerment Package
QIE	Quaid-e-Azam Industrial Estate

RYP	Rahim Yar Khan
SF	Sustainability Framework
SIE	Sundar Industrial Estate
SMART	Self Monitoring and Reporting Tool
SME	Small and Medium Enterprise
SOP	Standard Operating Procedure
STZ	Sialkot Tannery Zone
TA	Technical Assistance
TDS	Total Dissolved Solids
TSS	Total Suspended Solids

## EXECUTIVE SUMMARY

### **Purpose of the ESSA**

1. This Environmental and Social Systems Assessment (ESSA) has been prepared by the World Bank for the proposed Punjab Jobs and Competitiveness Program for Results (J&C PforR). It includes the following information: (a) a summary of environmental and social risks and benefits associated with proposed activities required to achieve the Program Development Objective (PDO) and the Disbursement Linked Indicators (DLIs) for each results area; (b) an assessment of the borrower's environmental and social management systems which apply to these activities, their risks and benefits; (c) an evaluation of the borrower's performance and track record in implementing its environmental and social management systems; (d) an assessment of the extent to which the borrower's environmental and social management systems are consistent with the Bank's core environmental and social principles spelled out in Bank policy and associated guidance materials; and (e) a set of recommendations and actions which the borrower has agreed to undertake to improve the implementation of applicable systems.

2. This report was prepared by Bank staff and consultants through a combination of reviews of existing program materials and available technical literature, interviews with government staff, and consultations with key stakeholders and experts. Findings of the assessment will be used in the formulation of an overall Program Action Plan (PAP) with key measures to improve environmental and social management outcomes of the program. The findings, conclusions and opinions expressed in the ESSA document are those of the Bank. Recommendations contained in the analysis have been discussed and agreed with the government of Pakistan and Punjab counterparts.

### **Program Objectives, Results Areas and Disbursement Linked Indicators**

3. The government of Punjab approved the Punjab Growth Strategy (PGS) in March 2015. The strategy sets a target of doubling Punjab's gross domestic product (GDP) growth by 2018 (from 3.5 to 7 percent) which will be necessary to absorb the one million people entering the workforce every year. The key features of the PGS are as follows: (a) to be sustainable, the strategy is private sector and export led—private investments will have to increase from US\$8 billion in 2013 to US\$17.5 billion in 2018, and exports will have to grow by 15 percent each year, particularly in labor-intensive manufacturing, given Punjab's abundant and competitive labor force.

4. The other main sources of growth are agribusiness, mining, information and communication technology (ICT), and productive urbanization. The strategy is inclusive, regionally balanced, and environmentally sound; it calls for reforms (at both the federal and provincial levels) to improve the business environment as well as increase the quantity and quality of public investments in support of infrastructure and skills development (in partnership with the private sector).

5. The main areas of reform at the federal level include trade and energy policies, while at the provincial level, they include policies governing business entry and operations, contract enforcement, property registration, building regulations, agribusiness, irrigation, mining, access

to skills, regional economic planning, land use rules, access to industrial land, public-private partnerships (PPPs), property tax, urban water, sales tax and governance. The proposed PforR operation will support the implementation of the PGS. The proposed PforR will focus in particular on the Industrial Development Sector Plan which, unlike other sector plans, is not currently supported by Bank lending.

6. The PDO is to improve the investment climate and promote investments and jobs in more inclusive and sustainable industrial estates in Punjab. As such, the program will contribute to the higher level objective of the PGS, which is to increase growth and job creation.

### **Program Key Results and Disbursement Linked Indicators**

7. There are four program key results measuring progress along the dimensions of the PDO:

- Improvement in aggregate Doing Business (DB) performance for Punjab (also DLI1)
- Significant progress made by Punjab on General System of Preferences (GSP)+ Labor Conventions as acknowledged by the European Union (EU) in its bi-annual evaluation
- Number of additional workers in existing industrial estates (IEs) (of whom women)
- New investments by new companies in existing IEs (of which FDI)

8. There are six DLIs directly related to all of the main activities financed by the program as discussed in the Program Scope section:

- **DLI1.** Improvement in aggregate DB performance for Punjab;<sup>1</sup> also a Program Key Result
- **DLI2.** Compliance with GSP+ Labor Conventions
- **DLI3.** Number of investment announcements by foreign investors<sup>2</sup>
- **DLI4.** 80 percent of large public infrastructure investment projects consistent with the Punjab Spatial Strategy (PSS)<sup>3</sup>

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<sup>1</sup> Four (business registration, contract enforcement, property registration, construction permits) of the 10 DB indicators are covered here as these are the ones under the purview of the subnational government (the others being federal level). For these four, the national DB score assigns a one-third weight to Lahore's ranking and two-thirds to Karachi. For the PforR, distance to the frontier for Lahore for these 4 indicators alone was being addressed. These are measured on an annual basis.

<sup>2</sup> Foreign investor has to be a registered company not an individual, has to have a minimum worldwide annual sales level of US\$2 million, needs to have a business plan (with investment metrics of capex and employment) in either manufacturing or value-added services with a minimum number of 10 jobs within two years of startup (defined as date of hiring of first employee).

<sup>3</sup> This DLI focuses on enforcing an economic discipline in prioritization and coordination of public sector investments to crowd in private investment. It does not directly tackle private initiatives as the market discipline is already reflected in the private sector's investment decisions—for investors, the focus is more on ensuring social and environmental sustainability, which is treated under DLIs 5 and 6.



- **DLI5.** Number of IEs and Combined Effluent Treatment Plant (CETP) projects presented to the PPP Steering Committee
- **DLI6.** Institutional reforms to improve public support to IEs and clusters

## **Environmental and Social Effects**

9. The environmental and social risks associated with the planning, construction, and operation of IEs can be significant. Historically, developers and operators of IEs in Punjab have not given high priority to managing or mitigating environmental and social impacts. In many cases, air pollution, industrial effluent, and poor management of solid waste from IEs have contributed to the deterioration of environmental quality with concomitant effects on human and environmental health as well as industrial and community safety.

10. Existing IEs in Punjab present numerous serious legacy environmental and social challenges. Left unattended or ignored, these problems will continue to cause significant environmental and social harm and, as such, represent a very significant opportunity to improve living conditions and reduce exposures to environmental contaminants. Strong evidence exists that both market forces and pressure for improved regulatory compliance are creating opportunities for change.

11. The proposed PforR operation is consistent with the requirements of Bank policy in that it does not undertake or support activities, which are considered to be a high risk from an environmental or social perspective. In fact, proposed measures to improve management of IEs hold much promise for great advances in the planning, construction and operation of these facilities. In addition, PforR will also partially contribute to enabling the Province of Punjab and industrial units to comply with GSP+ conditions established by the EU for the export of industrial products from Pakistan. Nevertheless, it must be recognized that the environmental and social context of this operation is sensitive and potentially highly visible.

## **Assessment of Borrower Systems**

12. The applicable federal and provincial environmental and social management systems in Pakistan and the Province of Punjab, from a legal, regulatory and institutional perspective, are considered to be generally appropriate and comprehensive, with only a few gaps in relation to the principles of the ESSA. The scope of the legal and regulatory systems is adequate to address underlying environmental and social risks, therefore, no significant changes to the overall structure of these management systems are required or proposed. The systems, on paper, are in many respects consistent with the principles and attributes of a well-functioning system as defined by Bank policy.

13. However, the institutions, processes, and procedures at the provincial level are not supported by adequate human and/or financial capacity to operate as designed. Thus, the environmental and social management system still largely exists only on paper. To begin to address these capacity constraints and to close these important implementation gaps, an incremental step-by-step, risk-based approach is recommended throughout the life of the proposed operation.

## **Stakeholder Consultations**

14. The preparation of the ESSA has been carried out in a participatory manner involving feedback and inputs from a number of key stakeholders working in government, private sector, and nongovernmental organizations (NGOs). The Bank team has used informal interviews and stakeholder dialogue in combination with more formal and structured focus groups and other public meetings to solicit information relevant to the analysis as well as to verify judgments made in the course of conducting this review. The Bank team conducted numerous field visits to IEs in Punjab to interact with the private sector, management boards, local and state governments as well as other international organizations and subject matter specialists active in this field.

15. The Bank sponsored a multi-stakeholder workshop in Lahore on December 8, 2015. Participants included a range of stakeholders from the government, international organizations, academia, private sector, local government, and civil society. Participants expressed a number of concerns including the sustainability of the program should Bank financing and technical support stop after the proposed operation closes, overemphasis of the program on export industry, sustainability of CETP's operations, effect of a change of government on the program, and the purpose of an Environmental Research and Monitoring Center (ERMC). Participants also expressed concerns over few aspects of implementation arrangements but were supportive of overall proposals to enhance social and environmental issues within IEs. The Bank responded to the concerns raised by the participants. The ESSA has reflected concerns raised by incorporating suggestions both within the text of the ESSA itself as well as in the more substantive recommendations and proposed actions. Annex 2 contains a summary of stakeholder engagement and consultations.

## **Recommendations and Proposed Actions**

16. The proposed PforR operation should be used strategically to begin to strengthen Punjab's environmental and social management systems by using a risk-based approach, starting with (a) reducing untreated effluent emissions from industries in IEs by the introduction of sustainable CETPs through PPPs; (b) providing the human resources and financial means for the Environmental Protection Agency (EPA) to conduct compliance monitoring of these estates as well as of the new industrial investments generated by the program; and (c) improving the capacity and practices around land acquisition processes and labor practices within IEs.

17. These activities have been concretized as part of the DLI related to IEs, which makes public support to IEs conditional on these improved environmental and social practices. As such, this requirement will have the full force of legal covenants and will be the basis for funds disbursement under this proposed operation. The program will also support the reinforcement of the EPA and the IE companies. The EPA will review the feasibility studies for the PPPs (IEs and CETPs) supported by the program as well as the negotiated PPP contracts as part of the quality control carried out by the PPP cell before their submission to the approval of the PPP Steering Committee. The EPA will also play an important role during the development and implementation of the PSS.

18. These activities are to be supported by technical assistance (TA) activities, included in the Project Concept 1 estimated at US\$4 million for the EPA. Other TA activities budgeted will support broader capacity-building activities, such as addressing solid waste management issues

and other sources of pollution and resource use in the IEs and development and adoption by the industries of a Sustainability Framework (SF), within the lifetime of the PforR operation.

19. With respect to social measures, the PforR will support the development of land acquisition and compensation procedures in relation to IEs. This will include the process for assessing land prices in line with market rates, and compensation for assets and livelihoods for landowners, tenants and non-titleholders. There is a precedent for such procedures under recent projects, such as the Lahore and Rawalpindi Metro Bus projects, and such practices will be incorporated into procedures for land acquisition for IEs. To improve social sustainability, IEs will also be expected to develop procedures for social and archaeological screening criteria for site selection.

20. IE development and management companies will improve stakeholder and public consultation to make the process more inclusive in accordance with the requirements of the Guidelines for Public Consultation by the EPA. These guidelines will be followed for planning and conducting meaningful consultation for each stage of social assessment. In the enforcement of labor laws, the Department of Labor and the IEs will work in close collaboration. A labor cell will be established within the social unit at the company level to liaise closely with the existing District Vigilance Committees (DVCs) on bonded labor and the district labor officer to monitor and help create the conditions for the enforcement of existing labor laws. To deal with public complaints or disputes within an IE, a system of grievance redress will also be developed and implemented.

21. IEs will also be expected to develop, notify, and implement standard operating procedures (SOPs) covering the occupational, construction, labor working conditions, and community aspects related to health, safety, and environment (HSE). The social units will take the lead in this aspect and work in collaboration with the Department of Labor and the EPA. The enforcement of bylaws relating to the establishment of industries and approvals of construction will also be improved by the IEs.

22. If the activities summarized below are successfully implemented, the overall environmental and social management systems in Punjab would have been considerably strengthened and set on a more sustainable path. Based on the Bank's assessment, a number of specific recommendations and actions have been put forth to address environmental and social risks associated with the program.

23. In particular, these recommendations follow the five principles of the Citizens Engagement Strategic Framework developed by the Bank: they are results-focused (DLIs 2, 4 and 5), they involve engaging throughout the operational cycle (for example, from the design of the PSS to its implementation), they seek to strengthen country systems (this is at the heart of the PforR approach), they are context-specific, and are gradual (for example, initial focus around IEs).

24. Chapter 7 of the ESSA provides more detailed descriptions of the scope of these recommendations and provides indicative costs.

## **Social Aspects**

25. The ESSA recommends undertaking the following social measures during the life of the program:

- Establish social and labor units to work on social dimensions of IEs
- Develop SOPs for land acquisition and compensation and for systematic screening for physical cultural resources (PCR) in the planning of IEs
- Improve implementation of stakeholder consultations and outreach during planning and implementation phases of IE development
- Improve the enforcement of labor- and gender-related regulatory framework within existing IEs
- Develop, notify and implement SOPs related to HSE and improve implementation of bylaws
- Develop effective Grievance Redress Mechanisms (GRM) to allow for more effective communications between affected people, communities and managers of IEs.

## **Environmental Aspects**

26. The ESSA recommends that the following actions be undertaken with respect to improving environmental management capacity:

- Undertake technical studies to address poor Management Information Systems (MIS)
- Establish an ERMC in EPA Punjab at Lahore
- Strengthen human resource capacity through comprehensive training
- Develop and elaborate industry-specific pollution standards for Punjab
- Conduct technical inventories of industrial waste streams
- Complete technical prefeasibility studies for landfills and/or other safe disposal sites for hazardous and non-hazardous waste generated at IEs
- Develop and implement the SFs for IEs
- Promote Cleaner Production and Energy Efficiency Program (CEEP) for small and medium enterprises (SMEs) outside of IEs.

## SECTION 1: INTRODUCTION: SCOPE OF PROPOSED PROGRAM, PDO AND DLIs<sup>4</sup>

### Context

1. Pakistan is the world's sixth most populous country with 182 million people and a per capita income of US\$1,410 in 2015 placing it in the lower-middle-income country category. Pakistan's GDP per capita growth rates have averaged 2–4 percent since 2010.<sup>5</sup> Since 2013, Pakistan has moved forward with macroeconomic reforms, as well as in the energy and growth areas, supported by an International Monetary Fund Program and Development Policy Credits from the Bank and other international organizations. Nevertheless, the country's rebound from the global financial crisis has been slow and fragile. Disappointing growth is partly due to volatile macroeconomic, political and security conditions, natural disasters as well as unreliable energy and limited skills. Adding to these factors are weak public sector management, governance and capacity, which hamper service delivery performance. Pakistan's performance on the DB index has also been deteriorating in recent years (ranked 138 out of 189 countries in the 2016 report, down from 76 in 2008). Private investments and exports have been stagnating at a low level.

2. Although pro-growth reform actions have been initiated at the federal level, progress on DB will depend significantly on a provincial level response. Punjab accounts for more than half of Pakistan's GDP and population. The province generates 60 percent of national GDP and is home to more than 100 million people. The business climate and potential for economic growth in the province will have a direct impact on national development. Going forward, the main growth drivers of Punjab will be manufacturing (including agribusiness), mining (major deposits have been recently discovered), construction (driven by rapid urbanization), and services (both domestic and internationally traded such as ICT and tourism once the security situation improves).

3. The government of Punjab approved the PGS in March 2015. The PGS sets a target of doubling Punjab's GDP growth by 2018 (from 3.5 percent to 7 percent), which will be necessary to absorb the one million people entering the workforce every year. The PGS was developed under the leadership of the Planning and Development (P&D) Department with the support of eminent Pakistani economists and the Bank through the J&C just-in-time TA (P148338) which was finalized in June 2015. The PGS also leveraged a large body of other recent analytical work—for example, the 2010 'Private Sector Development Strategy for Punjab' (Crown Agents - U.K. Department for International Development [DfID]), the 2010 'Industrial Policy, its Spatial Aspects and Cluster Development in Pakistan' (LUMS), the 2010 'The Constraints to Industry in Punjab, Pakistan' as well as detailed industry studies such as the 2013 'Garments as a Driver of Economic Growth' (International Growth Center).

4. The key features of the PGS are as follows:

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<sup>4</sup> For a full description of the program scope, PDO and DLIs as well as development and economic context of this operation, please refer to the Project Appraisal Document (PAD).

<sup>5</sup> World Development Indicators.

- To be sustainable, the strategy is private sector and export led—private investments will have to increase from US\$8 billion in 2013 to US\$17.5 billion in 2018, and exports will have to grow by 15 percent a year, particularly in labor-intensive manufacturing given Punjab’s abundant and competitive labor force. The other main sources of growth are agribusiness, mining, ICT, and productive urbanization. The strategy is focused on inclusive, regionally balanced, and environmentally sound growth.
- The strategy calls for reforms (at both the federal and provincial levels) to improve the investment climate as well as increase the quantity and quality of public investments in support of infrastructure and skills development (in partnership with the private sector). The main areas of reforms at the federal level include security, trade, access to finance and energy policies, while at the provincial level, it includes policies governing business entry and operations, contract enforcement, property registration, building regulations, agribusiness, irrigation, mining, access to skills, regional economic planning, land use rules, access to industrial land, PPPs, property tax, urban water, sales tax, and governance.

5. The J&C PforR will support the implementation of the Industrial Development Sector Plan of the PGSP (the scope of the J&C PforR is discussed in more detail in the following section).

6. Manufacturing, which accounts for 21 percent of Punjab’s GDP, is identified in the PGS as a major growth driver and employment generator.<sup>6</sup> The priority industries discussed in the PGS are textiles, apparel, leather goods, light engineering, automotive, and agriculture. The industrial structure is tilted toward SMEs often grouped as clusters—particularly within and around the ‘Golden Triangle’ (Sialkot, Gujrat, and Gujranwala) north of Lahore. Some of these clusters date back more than one hundred years and have achieved global preeminence (for example, the sports goods and surgical equipment clusters of Sialkot). Despite this proven potential, manufacturing growth in Punjab is stalled at 1 percent a year. The PGS objective is to reach 10 percent manufacturing growth in five years. The main constraints identified in the PGS are lack of reliable energy supply to industry, high business compliance costs, inadequate/insufficient industrial land, difficulties to access sources of financing, and a growing technology gap. Furthermore, much of this manufacturing activity is taking place informally in and around rapidly growing cities, where there is insufficient land formally zoned for industry. This is causing stress on inadequate infrastructure and is resulting in a mounting pollution threat, as there are no effective CETPs in Punjab. There are also serious concerns with workers’ safety and child labor following the industrial accident in the Sundar Industrial Estate (SIE) in November 2015 as well as regulatory (for example, the Factory Act) and physical constraints (for example, lack of daycare facilities in IEs) to women’s employment in the manufacturing sector.

7. The government has adopted the following vision for industrial development: “The Government seeks to promote industry and investment in Punjab in order to generate

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<sup>6</sup> Pakistan Urban Sector Assessment (2014): Location quotient analysis (share of employment in a given sector for the province relative to that share for the country) for agriculture is currently less than 1 (0.937) while manufacturing has the highest location quotient for the province (1.224), and has also been growing modestly over time.

employment, increase per capita income and ensure sustainable growth. This is to be achieved through policies and regulations, which facilitate private sector investment, increase productivity of firms and lead to the development of internationally-competitive, export-oriented industrial clusters.”<sup>7</sup>

## Program Description

### A. Program Scope

8. The J&C PforR will support the implementation of the Industrial Development Plan of the PGS (government program), which, unlike the other sector plans, is not currently supported by Bank lending.

9. Table 1 shows the program within the PGS that will be supported by the J&C PforR:

**Table 1. Program of Expenditure Supported by the J&C PforR (US\$, millions)**

Sector Plans of the PGS	Five Year Budget of the Sector Plans	Program
Industrial development	1,049	280
Energy	522	0
Skills	227	0
Urban development	4,901	0
Agriculture	844	0
Livestock/dairy	105	0
Education	499	0
Demography	92	0
Health	1,529	0
<b>Total</b>	<b>9,767</b>	<b>280</b>

10. With regard to industrial development, the program focuses on improvements to the business regulatory environment, institutional strengthening and capacity enhancement of institutions relevant to private sector investment, particularly the Department of Industry (DOI) and its agencies responsible for investment promotion, IEs, and support to industrial clusters. It also includes the development of the PSS and the systems ensuring its implementation, in particular with links to the public investment management process and public support to PPPs for industrial infrastructure.

11. The main parts of the Industrial Development Sector Plan not covered by the program are the direct development of new IEs (US\$405 million, including US\$119 million from the Viability Gap Fund) and the development of CETPs within these new estates (US\$85 million). These interventions were deemed as high risk and therefore the PforR will not directly finance them, but will instead support improvements to the systems leading to new IEs. Also, US\$35 million to facilitate access to finance was not included in the program because policies governing access to finance are primarily a federal matter best supported by Bank operations at the federal level.

12. The program consists of two results areas: (a) investment climate reforms and (b) spatial development. These two results areas are connected and together will help remove the main

<sup>7</sup> Punjab Growth Strategy 2018, p.23.

constraints (discussed in the strategic context) to Punjab’s industrial competitiveness. In effect, the first results area on investment climate reforms will improve the regulations and capacity of the government of Punjab to reduce the compliance cost of business regulations, increase workers’ safety, reduce child labor and facilitate women employment as well as attract leading investors. The second results area on spatial development will help the government prioritize and coordinate public investment projects in support of productive industrial and urban development—in particular, it will promote well-located and well-serviced IEs within and around major industrial growth centers. It will also upgrade existing IEs, in particular through the provision of CETPs, and provide TA to industrial clusters. As such, and through its focus on IEs, the program will also help alleviate the constraints which are primarily within the realm of the federal government (security, trade policy, energy, and access to finance). In effect, good practice IEs provide improved security, improved access to imported goods through bonded warehouses, improved access to energy through dedicated feeder lines or captive power plant as well as considerably reduced the financing needs of SMEs by providing access to ‘Plug and Play’ industrial buildings. Two results areas are briefly discussed in the following paragraphs (see annex 1 for more details).

### *Investment Climate Reforms*

- **Reduction in the cost and risks of doing business.** The program includes a series of activities designed to improve the investment climate through improved business registration, contract enforcement, construction permit delivery, and property registration. Implementation of those activities will result in the reduction of the time and cost to start a business, register a property, and obtain a construction permit. It will also reduce the risks of doing business by improving contract enforcement (for example, improved case management and the development of arbitration). These interventions will contribute to the national efforts at improving Pakistan’s national DB rank and, as such, improve branding of the country as an investment destination. Going beyond the DB indicators, the program will support the Investment Climate Reform Unit (ICRU), which will tackle both the stock and flow of business regulations.
- **Compliance with GSP+ Labor Conventions.** The program includes a series of activities designed to support the contribution of Punjab to Pakistan’s commitments related to GSP+ Labor Conventions. Pakistan was accorded GSP+ status in 2013, which enables duty-free access to the EU market. The program will support the reforms of labor laws to complete the legal compliance with the eight International Labour Organization (ILO) Labor Conventions according to Pakistan’s GSP+ commitment. These reforms will in particular facilitate employment of women by industry.
- **Improved investment promotion.** The program will reinforce the Punjab Board of Investment and Trade (PBIT) to help attract leading foreign investors in Punjab. This will entail improved investor targeting and outreach activities. Results will be measured by the number of significant investment announcements (above a threshold of US\$5 million) by foreign investors generated and facilitated by the PBIT.

### *Spatial Development*



- **Improved public investment process to support industrial and urban development.** The program will include a series of activities designed to ensure the independent review of proposed public investments with due consideration to its surrounding spatial development (including connectivity infrastructure, level of urbanization, and development of industrial zones) and consistency with the overall local development strategy. In particular, it will support the development of the PSS which will assess the potential of Punjab’s growth corridors and growth nodes and help prioritize and coordinate investments around them. This strategy will inform in particular large public investments related to connectivity infrastructure, urbanization, and the development of IEs. The program will support a panel of experts to validate the PSS and ensure that all industrial zones and 80 percent of large infrastructure investment project proposals (The Project Concept-I is reviewed by the Provincial Development Working Party) are consistent with it. The panel will also review the prefeasibility study for a new city and provide recommendations on whether or not to proceed with a feasibility study.
- **Improved support to industrial infrastructure through PPPs.** The program will include a series of activities designed to support the improvement of existing IEs including CETPs, through PPPs. The program will support IEs and CETPs through PPPs to transition away from the less than satisfactory public sector-led model.
- **New institutional setup to support IEs and clusters.** The program includes a series of activities designed to develop and implement a new institutional framework to improve support to IEs and clusters of SMEs in Punjab. The program will rationalize and reinforce the public institutions that support IEs and clusters (Punjab Small Industries Corporation [PSIC], Punjab Industrial Estate Development and Management Company [PIEDMC] and Faisalabad Industrial Estate Development and Management Company [FIEDMC]). It will also support a stronger supervision mechanism to help ensure that IEs (both public and private) meet the required labor and environmental standards—including through the reinforcement of the EPA. The program will support the creation of the Cluster Development Initiative to improve the capabilities of SMEs in Punjab’s high growth potential clusters.

13. Table 2 shows the Program Expenditure Framework along the two results areas:

**Table 2. Program Expenditure Framework (US\$, millions)**

	<b>Total</b>	<b>o/w Current Expenditures</b>	<b>o/w Technical Assistance</b>	<b>o/w Equipment</b>	<b>o/w Grants to Private Sector</b>
<b>Investment Climate Reforms</b>					
Reduction in the cost and risk of doing business	66	51	3	12	–
Compliance with GSP+ Labor Conventions	3	2	1	–	–
Improved investment promotion	12	9	1	2	–
<b>Spatial Development</b>					
Improved public investment process to support industrial and urban development	14	9	5	–	–

	<b>Total</b>	<b>o/w Current Expenditures</b>	<b>o/w Technical Assistance</b>	<b>o/w Equipment</b>	<b>o/w Grants to Private Sector</b>
Support to industrial infrastructure, including CETPs, through PPPs	71	5	10	2	54
New institutional format to support IEs and clusters	111	95	14	2	
<b>Program Implementation</b>	3	2	1		
<b>Total</b>	<b>280</b>	<b>173</b>	<b>35</b>	<b>18</b>	<b>54</b>

14. **Beneficiaries.** The proposed operation will provide benefits to several groups. First, firms will benefit from reduced time and costs for complying with business regulations and enforcing contracts. This will have a disproportionate positive impact on women-owned/women-run businesses as women are often less familiar with bureaucratic procedures and more prone to harassment by public officials than men. Women will further benefit from the reform of the policies affecting them directly (for example, the Factory Act) as well as from improvements in the siting and design of IEs, which will also allow for ancillary support services including day care and transport facilities. Finally, and like their men counterparts, women (as both entrepreneurs and workers) will benefit from the support to industrial clusters. In addition, the operation will enable firms to access global buyers by helping them to be socially and environmentally compliant as well by augmenting their technical capacity. These would lead to increased investments and more and better jobs. Government agencies and departments will benefit from improved capacity and systems.

15. **Development partners.** The implementation of the program will require extensive TA—the financial resources (US\$35 million) required for this TA have been secured (through the approval of the Project Concept 1 for the program) into the budget for the next five years as part of the Program Expenditure Framework. In addition, there is a parallel US\$4 million DFID-funded Bank-executed Trust Fund, which will help build the capacity of the agencies responsible for achieving the results—especially the ones related to investment climate reforms and CETPs as well as SME development through the Cluster Development Initiative.

16. Table 3 shows the share of the program financed by the Bank. Table 3 shows the financing allocated as part of the government's Program.

**Table 3. Program Financing (US\$, millions)**

<b>Source</b>	<b>Amount</b>	<b>% of Total</b>
Provincial Government	180	64
IBRD	100	36
<b>Total Program Financing</b>	<b>280</b>	<b>100</b>

### ***B. Program Development Objective***

17. The PDO is to improve the investment climate and promote investments and jobs in more inclusive and sustainable industrial estates in Punjab.

18. As such, the program will contribute to the higher level objectives of the PGS, which is to increase growth and job creation.

**C. Program Key Results and Disbursement Linked Indicators**

19. The program will finance six main activities to contribute to the PDO:

- Upgrading of systems to improve business regulatory processes
- Labor reforms to comply with the eight ILO Labor Conventions in the context of the GSP+ commitment
- Institutional development for effective investment promotion, facilitation, and aftercare as well as policy advocacy
- Spatial strategy to help prioritize and coordinate public infrastructure investments
- Institutional development and investments to promote private sector-led IEs and sustainable CETPs
- Institutional development to improve public support to industrial clusters

20. Each of the above activities will support the achievement of the PDO by

- reducing the regulatory cost and risk of doing business (a and c above);
- reducing the cost of accessing markets (b and e will help secure duty-free access to the European market through the GSP+ program and meet the social and environmental standards of global buyers and investors);
- facilitating access to well-located and well-serviced industrial land (d and e); and
- facilitating access to TA for firms (f).

21. There are four Program Key Results measuring progress along the dimensions of the PDO:

- Improvement in aggregate DB performance for Punjab (also DL11)
- Significant progress made by Punjab on GSP+ Labor Conventions as acknowledged by the EU in its biannual evaluation
- Number of additional workers in existing IEs (of whom women)
- New investments by new companies in existing IEs (of which FDI)

22. There are six DLIs directly related to all of the main activities financed by the program as discussed in the Program Scope section:

- **DLI1.** Improvement in aggregate DB performance for Punjab<sup>8</sup>—also a Program Key Result
- **DLI2.** Compliance with GSP+ Labor Conventions
- **DLI3.** Number of investment announcements by foreign investors<sup>9</sup>
- **DLI4.** 80 percent of large public infrastructure investment projects consistent with the PSS<sup>10</sup>
- **DLI5.** Number of IE and CETP projects presented to the PPP Steering Committee, one CETP operational by year 5
- **DLI6.** Institutional reforms to improve public support to IEs and clusters

23. DLI1 (also a key result) feeds directly into the “improve the investment climate” part of the PDO. DLI5 and DLI6 feed directly into the “inclusive and sustainable industrial development” part of the PDO. DLI2, DLI3, and DLI4 feed into both parts of the PDO.

#### *D. Key Capacity Building and Systems Strengthening Activities*

24. The reinforcement of key public institutions and processes are at the core of the program and will be critical for supporting the goals of the program. As shown in table 2, US\$35 million of the program will be allocated to TA aimed at building capacity and strengthening institutional processes and government systems. In addition, the implementation of the program will be supported by a parallel US\$4 million program of Bank-executed TA funded by DFID. The reinforcement of institutions and systems improvements constitutes DLIs and sub-DLIs in their own right (see DLIs 1, 3, 4 and 6 in annex 3) as well as legal covenants (see the PAP in annex 8). The main capacity-building and systems-strengthening activities along each results area are discussed below:

- **Investment climate reforms.** The program will build the capacity and improve the systems of the ICRU, DOI, Lahore High Court, Lahore Development Authority, and Board of Revenue (BoR) with respect to reducing the cost and risk of doing business. The program will support the Labor and Women Development Departments in leading reforms and initiatives toward increasing compliance with

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<sup>8</sup> Four (business registration, contract enforcement, property registration, construction permits) of the 10 DB indicators are covered here as these are the ones under the purview of subnational government (the others being federal level). For these four, the national DB score assigns a one-third weight to Lahore’s ranking and two-thirds to Karachi. For the PforR, distance to the frontier for Lahore for these 4 indicators alone are being addressed. These are measured on an annual basis.

<sup>9</sup> A foreign investor has to be a registered company not an individual, must have a minimum worldwide annual sales level of US\$2 million, needs to have a business plan (with investment metrics of capex and employment) in either manufacturing or value-added services with a minimum number of 10 jobs within 2 years of startup (defined as date of hiring of the first employee).

<sup>10</sup> This DLI focuses on enforcing an economic discipline in prioritization and coordination of public sector investments to crowd in private investment. It does not directly tackle private initiatives as the market discipline is already reflected in the private sector’s investment decisions—for investors, the focus is more on ensuring social and environmental sustainability, which is dealt with under DLIs 5 and 6.

GSP+ Labor Conventions. The program will build the capacity of the PBIT to enhance its investment promotion, facilitation, aftercare and policy advocacy capabilities.

- **Spatial development.** The program will build the capacity of P&D as well as the capacity of local governments and the Transport Department (investments in connectivity) to develop and implement the PSS. The strategy will provide a framework to ensure that the approval of large infrastructure investments, such as those within and around IEs, align with local needs and address market demands. The program will also support improved operations of IEs. It will also build the capacity of the EPA with respect to industrial pollution monitoring and enforcement. Finally, it will also build the capacity of the government to help industrial clusters access TA.
- The program will be coordinated through the Punjab Resource Management Program (PRMP), which is familiar with the PforR instrument and which has been reinforced so that it can cope with the extra workload.

## Program Implementation

### A. Institutional and Implementation Arrangements

25. The PRMP (within the P&D) will be responsible for coordinating the implementation of the program—it is already coordinating the implementation of the Governance PforR, which is proceeding satisfactorily. The PRMP was also leading the preparation of the program. As shown in table 4, achieving all the DLIs will be the responsibility of units within the P&D or agencies directly connected to the P&D. In particular, the ICRU (new unit within the P&D) will lead the implementation of the three DLIs related to investment climate reforms and improvements to IE infrastructure and institutional reforms for IEs and clusters. The urban unit (directly connected to the P&D) will provide technical support to the PRMP (through an internal task order) with respect to preparing the bidding documents for large procurements and reviewing the technical outputs related to the PSS (the urban unit will not bid for these contracts).

26. Table 4 details the implementing agencies for each of the results areas.

**Table 4. Implementing Agencies for Each Result Area**

<b>Investment Climate Reforms</b>	<b>Responsible/Sponsoring Department</b>	<b>Procuring agency</b>	<b>Implementing and/or partnering agencies</b>
Business registration	Department of Industry	PRMP	Labor Department, ICRU
Contract enforcement – case management/ADR center	Lahore High Court	PITB	PITB, ICRU
Contract enforcement – legal reforms	Law Department	PRMP	Services and General Administration Department, ICRU
Construction permits	Housing Department	PRMP	Lahore Development Authority, ICRU
Property registration	Finance Department/BOR	LRMIS	LRMIS, Excise and Taxation Department, ICRU
Compliance with GSP+ Labor Conventions	Labor Department	PRMP	Women Development Department, PBIT

Improved investment promotion	Department of Industry	PBIT/PRMP	PBIT
<b>Spatial Development</b>			–
Improved public investment process as per the Spatial Strategy	P&D Department	Urban Unit	Housing and Urban Development, Local Government Department, Transport Department, Department of Industry
Industrial infrastructure supported through PPPs	Department of Industry	PIEDMC/FIEDMC	PPP Cell, Environment Department/EPA, Labor Department, Women Department
Institutional reforms to support industrial estates and clusters	Department of Industry	PRMP/PSIC	PSIC, PIEDMC, FIEDMC
<b>Overall Program Coordination</b>	<b>P&amp;D Department</b>	<b>PRMP</b>	

27. **Program Steering Committee.** A Steering Committee headed by the chairman of P&D, and with representatives from all the implementing agencies, will be established to oversee progress as reported by PRMP (with the support of ICRU and the urban unit). The committee will provide strategic guidance and direction and facilitate coordination across different departments, agencies and levels of government involved. The committee will review and finalize recommendation reports and plans developed as part of the different results areas and DLIs and monitor progress on a quarterly basis. The committee will also arrange for the identification of needs for further TA and aligning these activities with the DFID-funded TA program.

#### **B. Results Monitoring and Evaluation**

28. The Program Key Results, DLIs, and intermediate DLIs will be regularly measured and reported. The PRMP will have overall responsibility for coordinating, monitoring, and reporting on the program’s results indicators. It will conduct regular reporting on progress in each of the results areas including the collection of output milestones for intermediate or DLIs.

- The first Program Key Result and DLI1 will be based on the aggregate DB performance for Punjab across the four selected indicators indexed to the performance of the top performer in the DB 2016 report using the methodology of that same report. This will ensure that Punjab’s performance on this indicator will not depend on the performance of other countries or future changes in the DB methodology.
- The second Program Key Result will be based on the evaluation made every two years by the EU of Punjab’s progress along the GSP+ Labor Conventions —the last report was published in February 2016 (it acknowledged significant progress but also important gaps left to be addressed), the next two reports are thus expected in 2018 and 2020.
- The third and fourth Program Key Results on employment and investments will be based on information to be provided by the PIEDMC and FIEDMC based on surveys of the enterprises operating in their IEs.

- **DLI2.** The Department of Labor will provide the information required to assess the progress made along the reforms of the labor laws.
- **DLI3.** The significant investment announcements from foreign investors will be monitored by the PBIT.
- **DLI4.** The PSS will be reviewed by the panel of experts jointly chosen by the government of Punjab and the Bank. This same panel will review the proposals (Project Concept-1s) of large investment projects (the ones presented to the Provincial Development Working Party) to ensure they are consistent with the PSS.
- **DLI5.** The PPP Cell will monitor the number of PPP contracts presented to the PPP Steering Committee.
- **DLI6.** A Steering Committee led by the DOI comprising all relevant stakeholders will supervise the development and implementation of the institutional reforms to improve public support to IEs and clusters.

## SECTION 2: ENVIRONMENTAL & SOCIAL EFFECTS OF THE PROPOSED PROGRAM

29. On the whole the proposed program as defined by the PDO, results areas and DLIs poses substantial environmental and social risk if business as usual is maintained with respect to treating the environmental and social effects of industrial development. On the other hand, the government has a strategic opportunity to leverage this program to significantly improve the way it addresses these social and environmental issues. In fact, this is a strategic objective of the program as reflected in the PDO: "...to promote inclusive and sustainable industrial development in Punjab." To back this up, two out of the five DLIs are squarely focused at promoting inclusiveness and worker conditions (DLI2) and taking care of industrial pollution (DLI5).

30. Specific activities under Results Areas 1 and 3 to introduce systematic changes to create an improved business climate and other proposed reforms of the PSIC raise few concerns from an environmental or social perspective.

31. The main environmental and social risks and benefits of the proposed program are associated with Results Areas 2. Specifically, the proposed activities relating to spatial development and planning as well as the provision of industrial infrastructure including the CETPs present a number of environmental and social challenges but also provide opportunity for meaningful systematic change if new practices are implemented and capacity to manage these risks is strengthened.

32. The following sections provide a detailed overview of the likely range of environmental and social issues, which have been identified in and around existing IEs today. The sections describe both the nature and significance of these risks with respect to five key concerns: likely impacts; environmental and social context; sustainability; institutional and capacity risks; and reputational risks.

### **Social Benefits and Risks**

#### ***Land Acquisition***

33. **Issues.** Land is a basic resource required for the establishment/expansion of any project, including IEs. The program mainly entails the rehabilitation and upgrading of IEs and is therefore, anticipating the risk of land acquisition and resettlement where existing estates are expected to be established, expanded, and/or made fully functional. In these operations, land acquisition and involuntary resettlement impacts are expected to be small based on past experience, and, if any, they are likely to be associated with temporary impacts during project operations, such as temporary land leasing for the contractor.

34. However, since the program may also include development of a system to be adopted for the establishment of new IEs, land for IE construction and access, road development will be required. It should be noted that not all IEs may involve land acquisition or resettlement issues as many may be located in remote and sparsely populated areas where public land may be available.



35. The private land areas referred to in table 5 were acquired through application of the Land Acquisition Act (LAA) 1894,<sup>11</sup> which only takes into account the payment of land and lost assets at market price to the titleholders. This approach has led to issues such as physical relocation, loss of homes, and loss of assets for non-titleholders as well as economic impacts with regard to interrupting or obstructing access to assets for other communities. Past experience indicates that some of the land acquisition for IEs may be community lands or community forest areas, particularly in remote locations. In some cases, land has been acquired under Section 17 (emergency) of LAA 1894, leading to issues related to lack of public consultation and sudden dispossession of land and assets leading to further vulnerability.

36. The land area required for some IEs can be large, as shown in Table 5 below for some of the IEs in Punjab.

**Table 5. Details of Land Areas Acquired for Major IEs**

S. No.	Industrial Estate	IE Development Institution	Location	Land Area Acquired in Acres	Number of Legacy Cases
1.	SIE	PIEDMC	Located on Sundar Raiwind Road, 45 km from center of Lahore	1,588	–
2.	Expansion of the Multan Industrial Estate (MIE) (Phases 1 and 2) CETP and Hazardous Waste Management Facility	PIEDMC	Located at a distance of 20 km southwest of Multan city adjacent to the MIE	Almost all state land	n.a.
3.	Bhalwal IE	PIEDMC	Located on Bhalwal-Bhera Road which is 16 km off Salam Interchange and at a distance of 36 km from Sargodha	Almost all state land	n.a.
4.	Rahim Yar Khan (RYK) IE	PIEDMC	The proposed site of RYK-IE is 2.5 km away from National Highway, about 12.5 km from city of RYK	454	–
5.	M-3 Industrial City	FIEDMC	M-3, Faisalabad	4,500	About 16 <sup>12</sup>
6.	Value Addition City (VAC)	FIEDMC	Khurianwala, Sahianwala Road, Faisalabad	Almost all state land	n.a.

*Source:* EIAs of respective projects and websites.

<sup>11</sup> Please see Section 3, Policy and Legal Framework, for a full description of the applicable policy, legal, and regulatory framework.

<sup>12</sup> Information obtained from the FIEDMC during the program mission in September 2015.

37. Unresolved legacy issues are very common, as ongoing land-related cases are reported in most of the IEs, including the PIEDMC - MIE, Quaid-e-Azam Apparel Park, and so on). The PIEDMC also reported about 16 cases during the development of M-3 IE, Faisalabad. PSIC experience has also shown that legacy issues arose at Gujrat, developed by the PSIC.

38. Most legacy issues relate to the rates of compensation be paid to the affected persons. These risks can affect the construction process of the new IEs and delay the start of operations. In several cases, such as the M-3, Quaid-e-Azam Apparel Park, and MIE, the emergency provision under Section 17 of LAA 1894 has been invoked to acquire private land, such actions further increase social issues during land acquisition.

39. **Risks.** Risks related to land acquisition are based on both equity and reputation. Unless compensation is paid in line with prevalent market rates, long drawn-out legal cases lead to financial and reputational loss. The latter will, among others, include the risk of lost investment opportunities from international industry that is keen to avoid such conflicts. Risks are also faced on a social equity basis as lack of compensation to non-titleholders often leads to poverty and vulnerability. The risk of conflict can also not be ruled out.

#### *Loss of Livelihood, Infrastructure, and Assets*

40. **Issues.** Punjab is a very productive province with regard to agricultural land and produce. The unplanned growth of industries in/nearby residential areas is becoming a serious concern. Lahore, for example, has the most industries in the country after Karachi and hence faces the issues that accompany locational aspects. In the past, most IEs were established on privately acquired agricultural lands. As for current IEs, the SIE converted land from agriculture to industrial use and the RYK IE also was established on cultivated land. This transition has impacts on the income source of the local population, which was based on agriculture.

41. IE location issues concern the surrounding land use (existence of housing colonies in the surrounding areas, schools, and other social amenities), conversion of agricultural land into built-up areas, loss of structures, infrastructure, and other built-up areas, loss of livelihood, and other issues related to exposure to industrial wastewater, air pollution, and solid waste disposal. These issues will likely be less significant for the rehabilitation of existing IEs; for new IEs, the risks can be moderate to high.

42. Some IEs were constructed on barren land, such as the Bhalwal IE. The Bhalwal IE is located at a distance of 4 km from Bhalwal and 36 km from Sargodha, with many small settlements in close proximity that may be affected by the IE. Conversion of agricultural land poses risks to livelihoods. MIE Phase 1 is located near settlements that would be affected by waste drainage. However, such risks can be managed with proper mitigation.

43. To develop the SIE site, the cost of labor and raw material transportation will be high, considering that it is 45 km from Lahore. This adds a burden to the road network, which is shared with local residents who will bear the higher time and financial costs that increased traffic represents. The SIE is surrounded by housing societies such as Fazaia and Bahria Orchard, and the access road is shared by the communities, which also creates a contextual risk.

44. **Risks.** The proposed program will be exposed to contextual social risks with respect to loss of livelihood, overburdened infrastructure and assets, including risk of conversion of

agricultural land, resulting in an increase in poverty on the larger level, potential increase in social conflicts, health risks to the neighboring community due to exposure to pollution and absence of grievance mechanisms to address these risks.

### ***Occupational Health, Safety, and Labor Issues***

45. **Issues.** Occupational health and safety concerns relate both to activities taking place within the boundaries of IEs as well as to areas beyond the IE walls. Within production facilities of IEs, many individuals are employed, often in difficult and dangerous environments. A recent example of a tragic incident that led to the loss of about 50 lives in an industry within the SIE occurred as a result of structural instability and lack of enforcement of legislation related to working conditions (see Box 1). Health and safety issues are often ignored in the face of greater productivity and existing legislation pertaining to it is rarely enforced.

#### **Box 1. Factory Incident in SIE**

Structural instability can have serious health and safety implications as demonstrated in a recent tragic incident. A multistory plastic industry situated in the SIE with a covered area of around 0.45 hectare collapsed on Wednesday, November 4, 2015, claiming more than 50 lives and resulting in a large number of injuries.

It is reported that at the time of the incident, there were almost 200 people working on the first floor and some shift workers were sleeping on the third floor. Over 100 workers were rescued. The factory owner also died in the incident. News reports suggest that workers were ‘mostly’ aged between 14 and 25 years. The rescue operation continued for several days and almost 17,500 tons of wreckage was cleared from the destruction site by rescue teams and the army.

The official investigations to discover the cause of the incident are still in process; an investigation committee will officially disclose the findings. However, initial media reports state that another floor of the building was under construction and the accident seems to have occurred due to the unloading of materials and vibration of operating machinery.

Pakistan's construction sector suffers from poor oversight and developers frequently flout building codes. The violation of safety principles often results in such incidents. If construction safety measures and occupational health and safety rules are followed it would help significantly in avoiding such accidents.

46. There are many issues related to non-enforcement of health and safety within IEs. There is no record maintained of worker/employee numbers within IEs in case of disasters. It is unclear if training is imparted on safety evacuation procedures. The maintenance of safety equipment and enforcement of worker safety laws are often ignored. Building codes are often ignored during construction and expansion of premises leading to increased risk of disasters.

47. **Risks.** The main risk posed by lack of enforcement of health and safety standards is the loss of life through accidents such as the one described in box 1, and fires. Such practices are not just a denial of laws; they are also not conducive to attracting international business investors or those industries which are keen to export their products.

### ***Physical Cultural Resources***

48. **Issues.** Issues related to PCR may not be significant for the rehabilitation and upgrading of existing IEs but as the program includes development of a system for the establishment of new IEs, disturbance to PCR, and chance find issues may be significant and will require proper screening and development of procedures.

49. Although IEs are expected to screen a potential site for its archeological significance, there is a need to ensure that this exercise is undertaken. There are incidents in Pakistan where sites of archaeological significance were discovered on IEs (Lakhwenjodaro in Sukkur) leading to serious concerns regarding the location of the estate. Further, 'chance finds,' for which there are no procedures in IEs, cannot be ignored. The Punjab Archeology Department conducted a survey across Punjab from 1994 to 1996 to map possible spots of archeological significance. According to this survey, Bahawalpur, Rawalpindi, and Multan districts have a high number of unprotected and unexcavated archaeological sites and this needs to be a consideration when selecting a site for new IEs.

50. **Risks.** The risk of loss and/or permanent damage to cultural property is a real one if screening for sites of archaeological significance is not conducted. Further, a chance discovery of such a site or objects carries a further risk of illegal construction, loss of heritage and potential disincentive for investors, who may not be able to build in a location that contains a site or objects of archaeological significance.

### *Indigenous Peoples and Vulnerable Groups*

51. **Issues.** The program area has no evidence of known indigenous peoples in Pakistan. Indigenous peoples are located in a limited area named 'Kalash Valley' in Chitral District of Khyber Pakhtunkhwa Province.

52. However, there are several vulnerable groups that warrant careful consideration in the operation of existing estates and in the process for establishment of new ones. These include women (especially women workers), wage laborers (especially those on a contract basis), child workers, and the disabled. Working women form a particularly vulnerable group.

53. Similarly during operation, women workers are vulnerable and may face issues related to lower wages, lack of safe transportation, lack of childcare and toilet facilities, and sexual harassment in the work place. Contract labor, both men and women, face issues of lower wages, and harsh working conditions such as longer hours.

54. Preference to hire child labor at low wages to reduce costs is a major social issue. Working in harsh weather conditions for long hours at odd locations makes this group particularly vulnerable.

55. Exhaustive legal provisions on labor have been enacted in Pakistan and adopted by the government of Punjab, for example, on working conditions and payment, including minimum wage, social security registration, safety at work, child labor, bonded labor, contract labor, female workers, and others. However, implementation remains limited.

56. **Risks.** There are no indigenous peoples located in the geographical context of the program, therefore, there are no risks related to them. To ensure that IEs attract foreign investment and are compliant with local labor laws, there is an urgent need to enforce existing legislation in industries in the IEs to control issues related to minimum wage, child labor, bonded and contract labor, and registration of employees with social security and the Employee Old-age Benefit Institution. The case of the Sialkot football industry is a good example, where adoption of best practices in labor and working conditions has resulted in positive international linkages.

## ***Social Benefits of Industrial Estates***

57. One of the most important benefits of the IEs is the opportunity for employment provided to the local communities. The proposed Bahawalpur IE, located on an estimated 2,500 acres, will provide employment opportunities to about 170,000–200,000 persons. Similarly, the proposed IE along Jhumra and Sargodha roads is also expected to offer job opportunities to a number of people. The semiurban Kasur IE, set up in 1998 at Lahore Road Sahiwal, is expected to generate increased employment with its improved power/water supply and diversification of industrial production. The textile sector proposed to be developed through Chinese investment in the M-3 IE, Faisalabad is expected to generate about 100,000 jobs once in operation.

58. Benefits beyond job creation include amenities for laborers, and provision of residential colonies for them including school, technical training institutions, and hospitals for medical care, such as those provided or planned at the Quaid-e-Azam Industrial Estate (QIE).

59. Likewise, the SIE provides amenities such as a concrete road network, sewerage system, electricity distribution system, potable water, fully equipped fire station, information signage, technical training facilities, estate-owned security arrangements, emergency medical services (social security), and so on.

## **Institutional and Capacity Risks**

60. **Issues.** The institutions involved in establishing IEs are divided into provincial and local level institutions depending on responsibilities, but this can be complicated when responsibilities and work are shared between institutions. The current overall institutional setup is complex and very weak with regard to capacity and procedures required for effective management of social issues.

61. **Risks.** The risk related to weak institutional capacity includes improper management of social issues. However, this risk can be managed with institutional strengthening during program implementation, along with development and implementation of appropriate management procedures for both the IE and individual industries.

## **Environmental Benefits and Risks**

### ***Environmental Performance and Risk Assessment of Existing Estates***

62. **Wastewater.** Emission of untreated effluent from industries that do not meet the National Environmental Quality Standards (NEQS) result in considerable environmental pollution and degradation. The primary export industries that the proposed PforR will focus on are tanneries, textiles, and apparel. These industries, like most others, emit raw untreated wastewater that does not comply with the NEQS.

63. IEs produce large amounts of wastewater, nearly all of which is discharged untreated to natural and manmade drains, as there are only two partially performing CETPs on IEs in the entire country. The drains in Punjab are part of an irrigation system and were specifically constructed to drain subsoil water, control waterlogging and salinity, and carry the surface runoff from surrounding lands. They mostly discharge to the rivers and rarely to the canals. At present, most also carry wastewater and thus function as part of urban sewerage/drainage networks with

negligible perennial natural water inflows. These drains are governed under ‘The Canal and Drainage Act 1873.’

64. In the absence of wastewater and pollution data from the PSIC, it is roughly estimated that the PSIC IEs are discharging approximately 10,000 to 40,000 m<sup>3</sup>/day of wastewater. The composite biochemical oxygen demand (BOD) concentrations at the discharge point are estimated in the range of 300–400 mg/liter. At present, the PIEDMC is managing three active IEs (SIE, QIE, and MIE) and is in the process of implementing many new ones. Estimated hydraulic and BOD pollution loads are presented in Table 6.

**Table 6. Hydraulic and BOD Pollution Loading**

Industrial Estate	Hydraulic Load (m <sup>3</sup> /day)	BOD Pollution Load (kg/day)
SIE-PIEDMC	120,000	42,000
Quaid-e-Azam IE-PIEDMC	60,000	10,140
MIE-PIEDMC	42,000	18,270
Faisalabad IE-FIEDMC	182,000	140,140

Source: PIEDMC and FIEDMC.

65. There is a legacy of lack of political will to regulate industry or to do any form of compliance monitoring. Neither the industries nor the provincial EPA tested the discharged effluent from the plants and estates with any frequency. The limited data on wastewater concentrations and loading is available owing to the limited operations of the Punjab EPA laboratory.

66. As a result, in April 2012 the courts intervened and Green Benches were established under the instruction of the Supreme Court of Pakistan. The courts are mandated to hear and rule on all cases related to environment. At present, many civil society organizations are approaching Green Benches against the government of Punjab and rulings have already been issued against the EPA.

67. The key required compliance standards for industries, as part of the overall NEQS, are listed in the Table 7 below. These standards were gazetted on November 26, 2010 by the federal government in Islamabad and later adopted by the provincial government of Punjab under the Punjab Environmental Protection Act (PEPA), 2012, which is binding on the estates.

**Table 7. Existing Emission Standards for Wastewater Disposal: Common Pollutants**

Parameter	Into Inland Waters	Into Sewage Treatment	Into Sea Water
pH Value	6–9	6–9	6–9
BOD - mg/liter	80	250	80
Chemical Oxygen Demand (COD) - mg/liter	150	400	400
Total Suspended Solids (TSS) - mg/liter	200	400	200
Oil & Grease - mg/liter	10	10	10
Anionic Detergents (as MBAS) - mg/liter	20	20	20
Total Dissolved Solids (TDS) - mg/liter	3500	3500	3500

Source: Punjab Environmental Protection Act, 2012.

68. The limited test data on effluent pollutant loads shown in Table 6 confirm high levels of BOD, COD, TSS, and other parameters that far exceed permissible standards. Therefore, heavily

polluted, untreated wastewater from the estates makes its way directly into surface water bodies, such as streams and rivers, or gradually into groundwater.

69. Tables 8 and 9 show common parameters for wastewater treatment and potential effects of various parameters on structures and receiving water bodies.

**Table 8. Common Parameters for Wastewater Treatment**

Common Parameters	Expected Concentrations of Effluent (mg/liter)	Concentration of Drain Effluent Before Discharge of Effluent (mg/liter)	Standards (mg/liter)
BOD	350–700	135–200	80
COD	700–1400	200–400	150
TSS	300–600	07–14	200

Source: Cleaner Production Institute Data Base

**Table 9. Potential Impacts of Common Wastewater Parameters**

Parameter	Potential Impacts
pH	Growth inhibition of bacterial species (responsible for removing organic pollution) under highly acidic or alkaline conditions
	Corrosion of water carrying system and structures from acidic, low pH wastewaters
	Malfunctioning and impairment of certain physicochemical treatment processes under highly acidic or alkaline conditions
Organic Pollutants	Depletion of dissolved oxygen (DO) levels of the receiving water body, below limits necessary to maintain aquatic life (4–5 mg/liter)
Suspended Solids	Sedimentation in the bottom of water bodies with adverse impact on flora and fauna
	Localized depletion of DO in the bottom layers of water bodies
	Reduced light penetration in natural waters and consequent reduction in photosynthesis
	Aesthetic nuisance
Oil and grease	Reduced reaeration in natural surface bodies, because of floating oil and grease film and consequent depletion in DO levels
	Reduced light penetration in natural waters and consequent reduction in photosynthesis
	Aesthetic nuisance

Source: Environmental Impact Assessment: CETP for SIE.

70. As noted, there are only two estates that have CETPs. One is owned and operated by the Pakistan Tanners Association at Korangi Sector 7-A in the Province of Sindh and the other by the Kasur Tanners Association at Kasur tanneries cluster in the Province of Punjab. Both CETPs are operating only partially and do not comply with the NEQS because of organizational reasons and lack of capital. Partially operated biological treatment processes cannot achieve NEQS compliance.

71. The Pakistan Tanners Association established an Environmental Management Company (EMC) which is responsible for the overall supervision of CETP operations. The total capital cost of the Korangi CETP was US\$5 million and was funded by the member tanneries, the Sindh government in the form of land, the federal government through the Export Development Fund and external financing. Member tanneries made a commitment for the payment of operation and maintenance (O&M) costs of the CETP. The EMC outsourced the operations of the CETP to a private operator, which is responsible for the technical operations of the plant. The EMC is responsible for the collection of the environmental fee for O&M from the member tanneries and disbursements for operational expenses. The Korangi CETP environmental fee is based on slabs. Four production slabs are used, that is, large, medium, small, and very small tanneries. The slab rates were determined on the basis of production (number of drums), hydraulic load, and

pollution load. Most of the members pay the monthly fee for the CETP operations; however, the fee is insufficient for 24-hour operation, therefore the plant is operated only for 12 hours each day.

72. The CETP at Kasur is the only one operating in Punjab. It was designed for the primary treatment of tannery wastewater through aerated lagoons. Kasur Tanneries Waste Management Agency is responsible for the operation of the plant, which treats about 13,000–18,000 m<sup>3</sup> daily from 237 tanneries. The Kasur CETP was funded by federal, provincial, and external agencies and cost about US\$4.5 million. However, the CETP is now facing many technical, operational, and performance problems. It is partially operational; one of the two wastewater streams is being discharged untreated to the Pandoki Drain. In addition, the treated effluent does not comply with the Punjab Environmental Quality Standards. The concentrations of BOD and COD of the treated effluent are 280 mg/liter and 450 mg/liter, respectively, much higher than the standards of 80 mg/liter and 150 mg/liter.

73. Solid and hazardous waste management, inefficient resource use and air pollution are also concerns at the estates.

74. **Solid and hazardous waste management.** Industries dispose of some of the most toxic and persistent pollutants, including heavy metals and synthetic organic chemicals, directly on land and to water bodies, without any form of environmental treatment or protection. This indiscriminate disposal of toxic waste by industries is contaminating fresh groundwater and prime arable land. Leaching of heavy metals at dumping sites is one of the major sources of groundwater contamination. Open burning of toxic industrial waste at low temperatures produces carcinogenic pollutants with adverse public health implications.

75. Hazardous Substances Rules 2007 is the relevant environmental legislation on the issue of hazardous waste management in estates although compliance is weak or nonexistent. Hazardous waste exposure can be minimized by adopting best occupational health and safety measures. A study conducted by the Sustainable Development Policy Institute in 2012 identified 25 sites polluted by hazardous wastes in the Province of Punjab.<sup>13</sup> Detailed surveys are needed at the industrial unit level and by sector in all the IEs to quantify hazardous solid waste generation.

76. Air pollution in the type of IE targeted under the program is not a major concern. Cement, iron and steel, fertilizer, sugar, power generation, and brickmaking are the major industry sectors that generate high levels of air pollution. These industries are generally not located in IEs. Most cement factories in Pakistan have installed electrostatic precipitators and bag filters to control the total suspended particulate emissions. Fertilizer plants, sugar mills, and power plants have also taken measures to reduce total suspended particulate emissions. For iron and steel plants and brick kilns, no commercially viable solution exists; partial compliance can be targeted for these sectors. In other industry sectors, high emissions of carbon monoxide are due to poor maintenance of boilers and generators. Most industries also face indoor air pollution issues. In most cases, cost-effective and financially viable cleaner production and energy efficiency solutions have been successfully implemented by industry.

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<sup>13</sup> Khwaja, Mahmood A., Nazma Shaheen, and Farzana Yasmeen. 2012. "Mapping of Chemically Polluted Sites in Pakistan." SDPI, Islamabad.



### *The Environmental Effects of Common Effluent Treatment Plants (CETPs)*

77. Part of the proposed PforR strategy is to use an incremental, phased risk-based approach to strengthen the province's systems and capacity to sustainably manage targeted IEs; DLI5 includes the presentation to the PPP Steering Committee of three negotiated PPP CETP contracts as well as having one CETP operational by the end of the program. Once the financing of these two CETPs is in place, it is expected that construction will start and once they are operational, the industries on the estates with the CETPs will begin to route their effluent for treatment.

78. CETPs themselves also pose inherent environmental risks. Their environmental effects need to be analyzed and understood to ensure that the appropriate mechanisms and measures are established within the existing national system, and that the required TA is provided concurrently with the proposed operation to support their implementation.

79. The key environmental concerns and effects associated with CETPs occur at three distinct stages: (a) Planning and Design- selection of appropriate technology and suitable land; (b) Civil Works and Construction - environmental issues, (c) Operational Requirements - large and constant energy demand and disposal of sludge residues containing hazardous pollutant loads.

80. Careful and deliberate planning and design considerations and choices are key to achieving optimum design and operational costs. There are many technologies in the market, but choosing the most appropriate one is key. Some technologies require large pieces of land to site large oxidation ponds, others require land that has a natural slope or can be contoured so that the treatment process from influent to effluent points is entirely gravity-fed, yet others require significant consumption of energy, which in turn needs backup power systems that can be prohibitively expensive if cost recovery is an issue.

81. Civil works and construction stage impacts are fairly modest. Civil works requirements are dependent on the technology chosen, but generally, will not be complicated and will be on a single site. As a common treatment facility to be used by different industries in an estate, a network of drains, channels, and pipes will possibly be required to receive the influent from multiple points and at the location of the approved environmental receptor for the discharged treated effluent. The main environmental issues will be removal, storage, and safe disposal of large volumes of spoil; dust and noise pollution; and occupational health and safety issues. There may also be erosion and sedimentation issues. Acceptable and suitable environmental receptors will need to be located nearby.

82. Operational stage environmental impacts can be severe, but will vary in complexity depending on how the plants are designed, operated, and managed overall. The main issues involve energy demand to power the plants, and sludge disposal management. The plants require uninterrupted and reliable power supply. Pakistan is facing critical power shortages, resulting in considerable daily load shedding throughout the country. If power is interrupted for long spells, the plants will become inoperable and will emit untreated/partially treated effluent at levels that do not comply with the NEQS. Therefore, emergency backup generators will be required along with backup fuel storage. The other major environmental impact stems from sludge removal from the oxidation and sedimentation ponds/chambers; such sludge may contain harmful pollutants, including heavy metals. Handling, storage, and final disposal of sludge poses a

significant risk to people and their environment, and detailed management plans for this will be required.

## **SECTION 3: POLICY & LEGAL FRAMEWORK FOR MANAGING ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROPOSED PROGRAM**

### **Introduction**

83. The government of Pakistan and the government of Punjab have enacted a range of laws, regulations, and procedures of relevance to the environmental and social effects of the proposed program. The applicable federal and provincial environmental and social management systems in Pakistan and the Province of Punjab—from a legal, regulatory, and institutional perspective, are generally appropriate and comprehensive. On paper, the scope of the applicable environmental and social legal and regulatory systems is considered to be generally adequate to address underlying environmental and social risks. Thus, no significant changes to the overall structure of the applicable legal and regulatory systems are envisioned or proposed under this operation. The following sections describe the most relevant aspects of the existing legal and regulatory framework as they apply to the proposed program.

### **Social Aspects**

84. Several laws, regulations, procedures, and technical guidelines have been developed at the federal and state levels to address key social risks associated with the development of IEs. The legal framework includes legislation addressing land acquisition, social analysis as part of the Environmental Impact Assessment (EIA), resettlement of affected people, and labor protections among many others. The most important of these overarching laws and regulations related to the social aspects of the program include the following:

- PEPA 1997 (Amended 2012)
- Pakistan Environmental Protection Agency (Pak-EPA) Review of Initial Environmental Examination (IEE) and EIA Regulations, 2000
- LAA 1894 and Punjab Land Acquisition Rules, 1983
- Antiquity Act 1975 and Punjab Antiquities Amendment Act 2012
- Employment of Child Act (ECA), 1991
- Labor Laws
- The Factories Act 1934
- The Protection Against Harassment of Women at the Workplace Act 2010
- Punjab Labor Policy, 2010
- Guidelines for Preparation and Review of Environmental Reports, 1997
- Sectoral Guidelines for Industrial Estate, 1997

- Guidelines for Public Consultation, 1997

85. The scope, coverage and relevance of these laws and regulations are briefly summarized below.

***Punjab Environmental Protection Act, 1997 (Amended 2012)***

86. The PEPA is the main act governing the assessment to be carried out for any intervention as a part of the EIA. It is fairly comprehensive legislation and provides the basic legal framework for protection, conservation, rehabilitation, and improvement of the environment. It contains provisions for the prevention of pollution and promotes sustainable development. The ‘environment’ has been defined in the act as (a) air, water, and land; (b) all layers of the atmosphere; (c) all organic and inorganic matter and living organisms; (d) the ecosystem and ecological relationships; (e) buildings, structures, roads, facilities, and works; (f) all social and economic conditions affecting community life; and (g) the interrelationships between any of the factors specified in subclauses (a) to (f).

87. The salient features of the law are:

- No proponent of a project shall commence construction or operation unless he has filed an application with the provincial agency designated by the provincial EPAs an EIA, and has obtained an approval;
- Establishment and formation of the Punjab Environmental Protection Council (PEPC);
- Prohibition of specified discharges or emissions;
- Punjab Environmental Quality Standards for wastewater, air emissions and noise; and
- Empowerment of provincial government to issue notices and to enforce them for the protection of the environment.

88. The act was amended in 2012 under the 18th amendment of the constitution, which grants legislative power related to environment and ecology to provincial governments from the federal government. The provinces are required to enact their own legislation for environmental protection. Other minor amendments include increasing the penalty cost for violations. The capability of regulatory institutions for environmental management is key to the success of environmental assessment that is undertaken to ensure that development projects are environmentally and socially sound and sustainable.

***Pakistan Environmental Protection Agency (Pak-EPA) Review of IEE and EIA Regulations, 2000***

89. This document sets out the key policy and procedural requirements for conducting an IEE and EIA. It contains a brief policy statement on the purpose of environmental assessment and the goal of sustainable development, and requires that environmental assessment be integrated with feasibility studies. It defines the jurisdiction of the federal and provincial EPAs and P&D

Departments. The document lists the responsibilities of proponents, and duties of responsible authorities, and provides schedules of proposals for determining whether the project requires IEE or an EIA. It also provides for environmental screening of projects under Schedules I, II, and III and lays down the procedures for Environmental Approval and for filing the case with the concerned EPA to receive the No Objection Certificate (NOC).

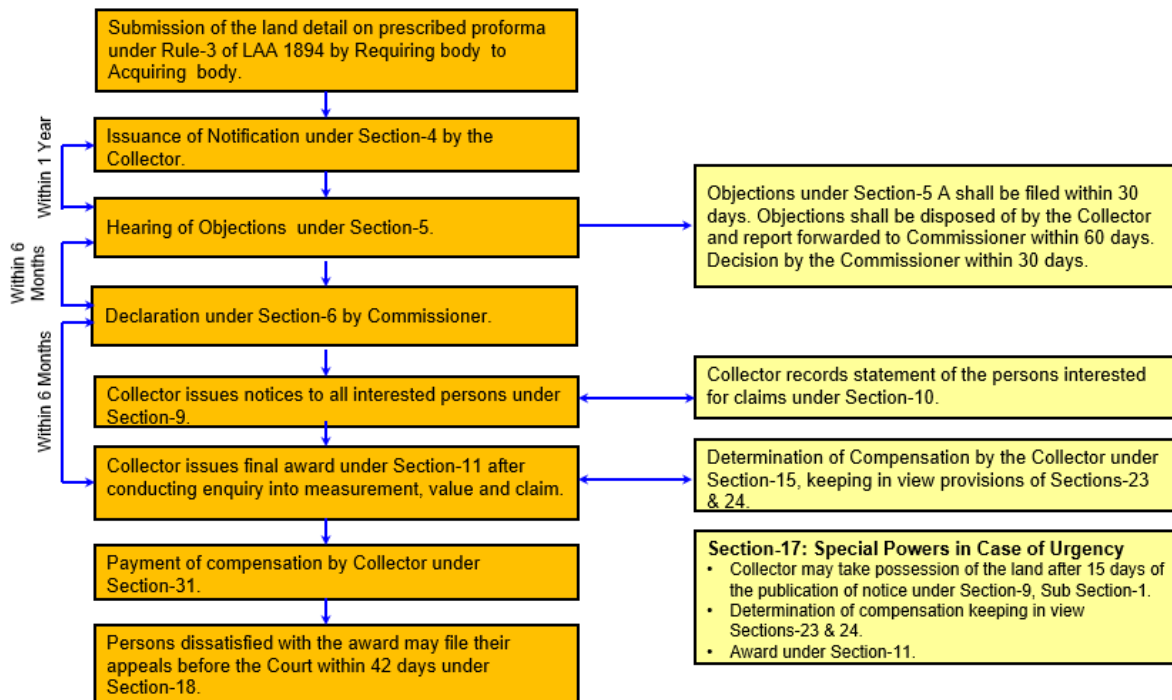
**Land Acquisition Act, 1894 (The Act)**

90. LAA came into force on March 1, 1894. The act aimed to amend the then existing law for the acquisition of land for public purposes and for companies. LAA 1894, as amended from time to time, is the primary law for the purpose of land acquisition in the Province of Punjab. The act provides for acquisition of land for public purpose and for companies. Several other laws also authorize the acquisition of land for specific purposes in the Province of Punjab. The government of Punjab has also framed the Punjab Land Acquisition Rules, 1983 (1983 Rules) under Section 55 of the act. The act and the 1983 Rules are intended to be read together. There are no regulations under the act, nor is there any provision for framing regulations under it.

91. While the act is a federal legislation, according to Article 142(c) of the constitution, a Provincial Assembly is competent to amend it. The act (as amended) is applicable to the Province of Punjab by virtue of West Pakistan (Amendment) Ordinance, 1969. This ordinance continues to be in force in the four provinces in view of the Adaptation of Laws Order, 1975. There is no specific provision in the act for resettlement and rehabilitation of persons displaced as a result of acquisition of their land.

92. The act is broadly grouped into 8 parts comprising 55 sections. The details of LAA 1894 are presented in annex-5. The relevant sections are shown in Figure 1 and a brief overview is presented below:

**Figure 1. Land Acquisition Process under Land Acquisition Act, 1849**



93. In accordance with the act, the legal process is initiated by an application from the government agency that requires the land as it is the requiring body. As land is a provincial issue according to the constitution, the next step is for the provincial government to deem it necessary to acquire the land, after which it takes the actions listed below and in Figure 1.

94. Under Section 4, it causes the publication of preliminary notification that the land is needed for a public purpose. This permits entry, survey, and investigation of the land in question by an authorized government servant so that the authorities can determine whether the land intended to be acquired is suitable for the purpose for which it is needed. Compensation shall be paid for any damage caused by such entry. The process of acquisition must start with a notification under Section 4. It is a condition precedent to the exercise of any further powers under the act.

95. Under Section 5, a formal notification is issued that the particular land is needed for a public purpose. This notification is published in the official gazette and the collector is required to issue a public notice of the substance of the notification. Issuance of Section 5 has to take place not later than one year after notification of Section 4.

96. Any person interested in any land, which has been notified under Section 5 may, within thirty days after the issuance of the notification, object to the acquisition of the land under Section 5A. The collector shall hear the objection, make necessary enquiries, and submit a report within 90 days to the appropriate government authority. This authority must announce its decision, which shall be final, within 90 days, otherwise the objection shall be deemed to have been admitted and the acquisition proceedings will come to an end.

97. When the provincial government is satisfied, after considering the report, if any, made under Section 5A that any particular land is required for public purpose, a declaration to that effect shall be made by an authorized officer of the provincial government under Section 6. This should follow within six months of the publication of the Section 5 notification.

98. After the declaration under Section 6, the commissioner of land acquisition collection shall “direct the collector to take order for the acquisition of land” under Section 7.

99. The collector then notifies under Section 8 to cause the land to be marked out, measured and planned (if this was not done after Section 4).

100. Under Section 9, the collector gives notice to all interested people that the government intends to take possession of the land and if they have any claims for compensation that they be made to him at an appointed time. Section 10 delegates powers to the collector to record statements of persons possessing any interest in the land or any part thereof as coproprietor, subpropriator, mortgage and tenant, or otherwise. Section 11 enables the collector to make enquiry into “measurements, value and claim and issue the final award.” Included in the award is the land’s true area, the collector’s view of what compensation is warranted, and the apportionment of that compensation to all interested people.

101. Though this section is the one that contains the final award, there are two other sections, that is, Section 23 and Section 24, which actually take place before Section 11. This is because these two sections pertain to compensation and the criteria to be followed (Section 23) or not to be followed (Section 24) in arriving at appropriate compensation.

102. Under Section 23 are included such items as the market value of the land at the time of notification of Section 6, and various damages that have been sustained at the time possession was taken.

103. Matters not considered in awarding compensation, that is, Section 24, include such items as the degree of urgency, which led to the acquisition, any disinclination of the person interested in the land to part with it, any expected increase in value of the land from its future use, and so on.

104. When the collector has made an award under Section 11, he will then take possession under Section 16 and the land shall thereupon vest absolutely with the government, free from all encumbrances.

105. Section 18 pertains to persons still dissatisfied with the award, who may request the collector to refer the case to the court for determination and decision. This does not affect the taking possession of the land.

106. In cases of emergency, where the BoR considers it expedient to take possession of any land at anytime before an award under Section 11 has been made, it shall notify this act in writing to the collector intimating in addition the date by which the land is required. Under Section 17, the collector can, after causing a notice to this effect to be served on the person or persons interested in the land, take possession of the land subject to the liability to pay any amount, which may be incurred on account of acquisition. This specific section will not be applicable in the proposed program, as the acquisition of land is being done through normal procedures.

### ***Punjab Land Acquisition Rules, 1983***

107. The Punjab Land Acquisition Rules, 1983, describe the land acquisition procedure for public purposes or for a company. The Punjab Land Acquisition Rules comprises 16 rules pertaining to area notification and surveys, inquiry and award, compensation and apportionment, awards and dispute resolution, and exceptions. Important rules for acquiring land are described below:

- **Rule 4.** This rule states that the acquiring agency shall submit an application under Rule 3 to the collector of the district concerned on a prescribed form for the acquisition of land. Then, the collector of the district shall examine feasibility of the land acquisition, taking into consideration the genuineness of the public purpose involved.
- **Rule 5.** According to Rule 5, the collector of the district, after the examination of feasibility, issues a notification under Section 4 stating clearly the details of the area to be acquired.
- **Rule 6.** In accordance with Rule 6, after the issuance of the notification under Section 4, the collector shall take immediate steps to have the land surveyed and submit a report to the commissioner not later than sixty days from the date of the publication.

- **Rule 7.** The rule describes the procedure for the issuance of notification under Section 5 by the commissioner, where the land is to be acquired for a public purpose, and the reporting procedure to the BoR in case any delay occurs in the issuance of notification.
- **Rule 8.** This rule states that where the land is to be acquired for a company, the commissioner, on receipt of the survey report of the collector under Rule 4, forwards the same to the BoR for issuance of notification under Section 5.
- **Rule 9.** According to Rule 9, objections received under Section 5A by the collector shall be disposed of with least possible delay and along with the recommendations shall be forwarded to the commissioner within a prescribed time limit for decision.
- **Rules 10 (1), (2), and (3).** This rule states that the commissioner of the division, when issuing a notification under Sections 5 or 17, shall ensure required details for the acquisition of land.

108. The rules also describe the procedure for land acquisition where a company makes an urgent request for invoking the provision of Section 17 of the act.

109. It is also mentioned that no land lying near a town, meant for fodder cultivation or for orchards or otherwise cultivable shall be notified for acquisition for the establishment of any industry except if it is declared by the agriculture, health, and industry departments that no risk would be involved due to such land acquisition.

- **Rule 11.** The rule states that the collector, while forwarding draft notifications under Sections 5 and 17 to the commissioner, shall ensure that the certificates, documents, and information mentioned in the act are appended.
- **Rule 12.** The rule states that the estimated cost of the land worked out under Rule 10(2) is approved by the collector/commissioner/BoR.
- **Rule 13.** According to Rule 13, the collector or the commissioner may not deliver possession of land sought to be acquired by the department or agency concerned unless sufficient funds for the payment of compensation are placed at the disposal of the collector in advance.
- **Rule 14.** The rule states that if any land acquired by the department or local authority for public purpose is not used as proposed, that land should be handed over to the collector for disposal by the order of the government.
- **Rule 15.** Where land has been acquired by a company it shall not be sold or disposed of before the approval of government.
- **Rule 16.** This rule deals with penalties and states that where land is used for a purpose other than that for which it was acquired by the acquiring agency, it shall be repossessed immediately and the acquiring agency shall be liable to penalty.



### ***Employment of Child Act, 1991***

110. Article 11(3) of the constitution of Pakistan prohibits employment of children below the age of 14 years in any factory, mine, or any other hazardous employment. In accordance with this article, the ECA 1991 disallows such child labor in the country. The ECA defines a child to mean a person who has not completed his/her fourteenth year of age. The ECA states that no child shall be employed or permitted to work in any of the occupations set forth in the ECA (such as transport sector, railways, construction, and ports) or in any workshop wherein any of the processes defined in the act is carried out.

111. Presently the government of Punjab has draft a new act titled ‘Punjab Restriction of Employment of Children Act 2015’ dealing with child labor in the commercial and industrial sectors of Punjab. The act aims at banning children up to 14 years from all types of employment. The approval of the act is ongoing and expected to be approved by the Punjab Assembly in a short span of time.

### **Labor Laws**

112. The constitution of Pakistan contains a range of provisions with regard to labor rights found in Part II: Fundamental Rights and Principles of Policy:

- Article 11 of the constitution prohibits all forms of slavery, forced labor, and child labor.
- Article 17 provides for a fundamental right to exercise the freedom of association and the right to form unions.
- Article 18 prescribes the right of its citizens to enter upon any lawful profession or occupation and to conduct any lawful trade or business.
- Article 25 lays down the right to equality before the law and prohibition of discrimination on the grounds of sex alone.
- Article 37(e) makes provision for securing just and humane conditions of work, ensuring that children and women are not employed in vocations unsuited to their age or sex, and for maternity benefits for women in employment.

113. Pakistan’s labor laws trace their origins to legislation inherited at the time of partition. The laws have evolved in response to socioeconomic conditions, shifts in governance, state of industrial development, population and labor force expansion, growth of trade unions, level of literacy, and the government’s commitment to development and social welfare.

114. Under the constitution, labor is regarded as a ‘concurrent subject,’ which means that it is the responsibility of both the federal and provincial governments. However, for the sake of uniformity, laws are enacted by the federal government, stipulating that provincial governments may make rules and regulations of their own according to the conditions prevailing in or for the specific requirements of the provinces.

115. The labor laws are a comprehensive set of laws in Pakistan dealing with the following aspects:

- Contract of employment
- Termination of contract
- Working time and rest time
  - Working hours
  - Paid leave
  - Maternity leave and maternity protection
  - Other leave entitlements
- Minimum age and protection of young workers
- Equality
- Pay issues
- Workers' representation in the enterprise
- Trade union and employers association Regulation
- Other laws

***Pakistan Labor Policy, 2010***

116. Pakistan's Labor Policy aims at attaining its objectives in a manner best suited to the resources of the country and the present state of economy. There is an urgent need to revitalize the economy to increase the level of productivity, promotion of investment, and maximization of employment. There is an equally genuine requirement to create, among workers and employers, a better awareness of their obligations to the national objectives stated above. At the same time, the government recognizes that workers and employers must enjoy reasonable benefits. With these priorities in view, the government considers that a balanced labor policy should be based on the following objectives:

- Workers' rights to form unions and unions should be protected and an institutional framework be made available to foster close cooperation between workers and employers at the establishment level.
- Equitable adjustment of rights between workers and employers should be ensured in an atmosphere of harmony, mutually beneficial to workers and the management.
- Consultations between workers and employers on matters of interest to the establishment and welfare of workers should be made more effective.

- Adequate security of jobs should be available to workers and there should be expeditious redressal of their grievances.
- Conditions should be created such that workers and employers are committed to enhancing productivity.
- Promotion to higher jobs should be ensured at all levels based on suitability and merit and for this purpose, arrangements should be made for in-service training facilities.
- Facilities for proper matching of job opportunities and job seekers should be strengthened and standard procedures streamlined.
- Social insurance schemes should be further strengthened.
- Just and humane conditions of work should be guaranteed to all workers.
- Forced labor in all its forms is to be eliminated.
- Provisions relating to the employment of children are to be strictly adhered to and enforced.

117. To address these concerns, the Labor Policy is divided into four parts: the Legal Frame Work; Advocacy: Rights of Workers and Employers; Skill Development and Employment; and Manpower Export.

***Compliance Requirements under Generalized Systems of Preferences GSP+***

118. Pakistan acquired the status of EU's GSP+, which allows increased access of some categories of Pakistani products by allowing duty-free exports to EU markets from January 1, 2014.

119. GSP+ requires ratification and compliance of twenty seven International Conventions including eight core labor standards of the ILO. These eight core labor-related conventions include the following:

- Convention concerning Forced or Compulsory Labor, No.29 (1930)
- Convention concerning the Abolition of Forced Labor, No.105 (1957)
- Convention concerning the Application of the Freedom of Association and Right to Organize, No.87
- Convention concerning the Application of the Principles of the Right to Organize and to Bargain Collectively, No.98 (1949)
- Convention concerning Equal Remuneration of Men and Women Workers for Work of Equal Value, No.100 (1951)

- Convention regarding discrimination in Respect of Employment and Occupation, No.111 (1958)
- Convention concerning Minimum Age for Admission to Employment, No.138 (1973)
- Convention concerning the Prohibition and Immediate Action for the Elimination for the Worst Forms of Child Labor, No.182 (1999)

120. The following labor laws (out of 24) relate directly to the implementation of the eight Labor Conventions:

- Bonded Labor System (Abolition) Act, 1992
- Employment of Child Act, 1991
- Minimum Wages Ordinance, 1961
- Industrial Relations Act, 2010
- West Pakistan Minimum Wages for Unskilled Workers' Ordinance, 1969

121. Two of the important labor-related aspects, which are required to be strengthened include the equal remuneration of men and women workers for work of equal value and removal of discrimination with regard to employment and occupation.

122. Special institutional arrangements have been proposed in the above five laws for ensuring implementation, as follows:

- Setting up of Vigilance Committees in the Bonded Labor (Abolition) Act
- Setting up of a cadre of inspectors for enforcement of the ECA Act.
- Establishment of Minimum Wage Boards in the Minimum Wages Ordinance
- Appointment of registrars of trade unions and establishment of labor courts under the Industrial Relations Act.

***The Protection Against Harassment of Women at the Workplace Act, 2010***

123. The act protects women against sexual harassment at the workplace. The act is composed of 13 sections elaborating definitions, composition of the inquiry committee, procedure for holding inquiry, penalties (minor and major), powers of inquiry committee, role of the employer, the process for appeal against minor and major penalties, ombudsmen and powers of the ombudsmen.

***Pakistan Antiquities Act 1975 and Punjab Antiquities Amendment Act 2012***

124. The current Antiquities Act 1975 (amended in 1990), redefined as 'ancient' any object that is at least 75 years old. It requires that all accidental discoveries are reported to the federal

Department of Archeology. It also makes the federal government the owner of all buried antiquities discovered from any site, whether protected or otherwise. It bans all new construction within a distance of 200 feet from protected antiquities. The cultural heritage laws of Pakistan are uniformly applicable to all categories of sites regardless of their state of preservation and classification as monuments of national or world heritage. The Antiquities Act guarantees that no changes or repairs can be made to a protected monument even if it is owned privately without approval of the official agencies concerned with it. The Punjab Antiquities Amendment Act 2012 adopts the Act of 1975 with a few minor changes.

### ***Sectoral Guidelines for Industrial Estates, 1997***

125. These guidelines deal with IEs and identify the key environmental issues that need to be assessed as well as mitigation measures and project alternatives to be considered in the actual EIA. The guidelines include specific references to the following:

- A sector overview of the industry and the processes;
- Site evaluation aspects during site selection;
- Potential impacts on the environment and social aspects;
- Mitigation measures (abatement technologies);
- Monitoring and reporting;
- Management and training; and
- Checklist of likely social and environmental impacts and mitigation measures.

### ***Guidelines for Public Consultation, 1997***

126. These guidelines address possible approaches to public consultation and techniques for designing an effective program of consultation that reaches all major stakeholders and ensures the incorporation of their concerns in any impact assessment study. The guidelines cover consultation, involvement and participation of stakeholders; effective public consultation (planning, stages of an EIA where consultation is appropriate); and facilitation of involvement (including the poor, women, and NGOs).

### **Environmental Aspects**

127. This section provides a description of relevant laws and regulations, which pertain to the environmental aspects of the proposed program.

### **Legislative Framework**

128. The following legislation is relevant for the creation and operations of IEs, and installation and operations of CETPs in the Province of Punjab:

- PEPA 1997 and amended PEPA 2012

- The Factories Act 1934
- The Canal and Drainage Act 1873
- The Punjab Wildlife (Protection, Preservation, Conservation and Management) Act, 1974
- The Punjab Local Government Ordinance 2001
- LAA 1894
- Pakistan Environmental Assessment Procedures

### ***PEPA 1997, Amended 2012***

129. PEPA 2012 is the overriding environmental legislation in the Province of Punjab. Geographical areas lying outside the provinces but within the administrative boundaries of Pakistan are covered by PEPA 1997. PEPA 2012, Section 30 states that the provisions of this act shall have an effect notwithstanding anything inconsistent therewith contained, in any other law for the time being in force.

130. Pakistan's environmental management framework is relatively mature but there are institutional obstacles to its effective application.<sup>14</sup> The basics of a command and control regulatory program are not in place nor is there any significant use of complementary measures, such as economic instruments, voluntary programs, and transparency, and disclosure. The vast majority of industrial establishments, with some notable and limited exceptions, and the government to some extent, have yet to accept the polluter-pays-principle. Its rules and regulations lack the specificities for effective implementation; for example, the NEQS for wastewater are not subsector-specific and area-specific nor do they have any relationship with the ambient conditions. In addition, PEPA 1997 did not establish a complete inspection and monitoring system.<sup>15</sup>

131. PEPA 2012 under Section 6 instructs the Punjab EPA to revise the NEQS in consultation with stakeholders, establish ambient quality standards for air, water, and land, establish a system of surveillance and monitoring, and conduct research and development. PEPA 2012 states that noncompliance with the NEQS and not paying pollution charges will invoke implementation of punitive sections of the Environmental Protection Order (EPO), and penalties to every noncomplying person, corporate body, government agency, local authority, or local councils. Cases challenged by the parties will be settled by the environmental magistrates and tribunals, and if required the cases can also be appealed in the higher courts.

132. PEPA 2012 under Section 11(2) for the levy of pollution charges states that, "The provincial government may levy a pollution charge on any person who contravenes or fails to comply with the provisions of subsection (1), to be calculated at such rate, and collected in accordance with such procedure as may be prescribed." Further to this, Section 11(3) states that

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<sup>14</sup> World Bank. 2006. "Pakistan Strategic Country Environmental Assessment."

<sup>15</sup> Ralph, Luken. 2008. "Industrial Environmental Regulation, 1997–2007: Reasons for the Failure of Existing Manufacturing Plants to Comply with the NEQS."

“Any person who pays the pollution charge levied under subsection (2) shall not be charged with an offence with respect to that contravention or failure.”

133. Comprehensive rules concerning “Pollution Charge for Industry (Calculation and Collection) Rule 2001 under PEPA 1997” were prepared in consultation with stakeholders but are awaiting implementation. The following considerations and guidelines were adopted under the rules in 2001:

- The need for an equitable, simple, and workable approach toward establishment of pollution charge
- The need for real progress toward making the industry environmentally friendly without jeopardizing economic growth in the country
- The need for industry to be allowed a period in which it can prepare for compliance with the NEQS
- The level of pollution charge shall be established through a process of negotiation
- The level of pollution charge should be initially such that the industry should feel the impact, but should not be excessive such that the financial health of the concern is jeopardized
- The system should be applied uniformly across all the industrial sectors

134. In the light of these considerations and guidelines a comprehensive system was developed comprising schedule of payment, escalation, parameters applicable for pollution charge, definition of pollution unit, exemption of pollution units, method of determination and so on.

### **Box 2. Punjab Social Development Fund**

Section 9 of PEPA 2012 instructs the establishment of the PSDF. It is mentioned that the PSDF can generate funds from multiple government, private sector, and international sources. PEPA 2012 further states that these funds can be utilized for projects designed for the protection, conservation, rehabilitation, and improvement of the environment; the prevention and control of pollution; the sustainable development of resources; research in any aspect of environment; and any other project with environmental objectives in line with the purposes of PEPA 2012. The Board of the PSDF is proposed to be chaired by the chairman-P&D Board/Department, and comprised of maximum six provincial government secretaries, maximum ten representatives of private sector, NGOs and donors, and DG of the provincial EPA. Major functions of the board are financial sanctions for projects, investment of funds for profit, and monitoring of projects financed by the PSDF.

The Ministry of Environment (at present Ministry of Climate Change) notified PSDF Board (Procedure) Rules in 2001. These rules state the operational procedures for the PSDF Board. The Ministry of Environment notified the PSDF (Utilization) Rules in 2003, which cover procedures for preparation and appraisal of project proposals seeking PSDF funding. Comprehensive criteria for sanction of financial assistance, procedures for financial assistance, post sanction formalities, monitoring and financial audits have been stipulated in the rules. The board is also instructed to

135. In addition, provisions of Section 11 establish that the law is universal and it is applied to all sources of pollution including municipal sources.

136. An ESSA at the program level is beyond the scope of PEPA 2012. It includes provisions for environmental assessment at the component level of the program and it instructs the proponents of projects to conduct an EIA or IEE according to the size and impacts of the projects.

137. Most of the IEs, CETPs, and real estate development under spatial P&D are subject to an EIA. Section 12 of PEPA 2012 establishes that “no proponent of a project shall commence construction or operation unless he has filed with the provincial agency an IEE or where the project is likely to cause an adverse environmental effect, an EIA, and has obtained from the provincial agency approval in respect thereof.” Under PEPA 2012, public participation through public hearing is essential as part of the IEE and EIA reports approval. ‘Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations, 2000’ prepared by Pak-EPA stipulate the complete approval system for IEEs and EIAs.

### ***Canal & Drainage Act (CDA), 1873***

138. CDA 1873 focuses on construction and maintenance of drainage channels and defines powers to prohibit obstruction or order their removal. It also covers issues related to canal navigation. It briefly addresses issues relating to environmental pollution. Section 70(5) of the CDA clearly states that no one is allowed to “corrupt or foul the water of any canal so as to render it less fit for the purposes for which it is ordinarily used.” In addition, Section 73 of the CDA gives power to arrest without warrant or to be taken before the magistrate a person who has willfully damaged or obstructed the canal or “rendered it less useful.”



### ***The Factories Act, 1934***

139. The Factories Act, 1934 concerns regulation of labor in factories and addresses issues regarding labor, wages, working hours and health and safety. The Factories Act also briefly refers to environmental issues. Section 14 deals with the disposal of industrial wastewater and states that “effective arrangements shall be made in every factory for the disposal of wastes and effluents due to the manufacturing process carried on therein.” The Factories Act states that “the provincial government may make rules prescribing the arrangements to be made under subsection (1) or requiring that the arrangements made in accordance with that subsection shall be subject to the approval of such authority as may be prescribed.” The Factories Act does not specifically deal with the issue of air pollution but it has clauses under which the issue of air pollution has been addressed. Section 33-Q allows provincial governments to establish rules for factories, whose operation exposes persons to “serious risk of bodily injury, poisoning, or disease.”

### ***Punjab Wildlife Protection, Conservation and Management Act, 1974***

140. The act requires the protection of wildlife species declared as endangered/threatened and rare. It gives protection to these species by declaring their natural living environment as protected and reserved, which includes areas such as national parks, wildlife sanctuaries, and game reserves.

141. The Penal Code discusses offences where public or private properties and/or human lives are affected due to intentional or accidental misconduct of an individual or body of people. The code defines the penalties for violations concerning pollution of air, water bodies and land. Noise pollution is covered in Section 268. In the context of this program, the Penal Code can provide a basis for the IEs to coordinate activities with the local authorities to ensure that construction and operation activities do not become a cause of public nuisance or inconvenience.

### **Mandatory Environmental Compliance**

142. The NEQS adopted by PEPA 2012 for wastewaters are discharge standards rather than ambient standards, whereas ambient standards for air pollution and noise have been recently promulgated. The NEQS for wastewater, air, and noise are attached as Annexure A and B. The NEQS for wastewater can be classified in two broad categories, that is, (a) common pollutants - pH value, BOD, COD, TSS, oil & grease, surfactants, TDS, total coliform and fecal coliform ; and (b) industry specific pollutants - all inorganic toxic metals and compounds, organic toxic substances such as pesticides, toxic radioactive substances, and excessively hot discharges. Each set needs different treatment; BOD, COD, and TDS are generally treated through biological treatment technologies, and toxic metals are treated or recovered by toxic metal reuse or recovery technologies.

143. Table 7 in the previous section presents the existing emission standards for wastewater disposal for common pollutants. Generally, wastewater discharges from IEs have higher values for all other parameters except pH and TDS as compared to the NEQS. Studies have also reported that wastewater characteristics from small IEs tend to be similar to the characteristics of municipal wastewater.

144. In order to meet the NEQS, wastewater discharges from IEs need pollution removal efficiency in the range of 60 to 99 percent. These levels of efficiencies are mostly achieved through energy-based mechanized biological treatment systems such as activated sludge process. These systems are relatively capital and energy intensive with high O&M costs. Table 10 presents the qualitative assessment of alternative treatment processes. It is important to note that these treatment processes only treat the common pollutants mentioned in Table 7 above.

**Table 10. A Qualitative Comparison of Alternative Biological Treatment Processes**

Parameter	Activated Sludge	Trickling Filters	UASB Reactors	OP a CW
Typical BOD Removal Efficiencies (%)	>90	70–80	60–75	70–80
Plant Area Requirement	Minimum: of the same order			Very high
Operation and Maintenance Cost	High	Moderate	Low	Minimum
Process Energy Requirement	High	Moderate	Low	Nil
Operational Supervision & Control	High	Moderate	Moderate	Minimum
Construction Cost	High: of the same order			Moderate
Capital Cost	High: of the same order			High <sup>[1]</sup>
Process Mechanical Equipment	Yes	Yes	No	No
Quantities of Sludge Produced	High	High	Low	Minimum

Note: <sup>[1]</sup> = Largely depends upon the cost of land; OP = Oxidation Ponds; CW = Constructed Wetlands.

## Voluntary Actions

### Box 3. CETPs for Industrial Estates

The following observations should be taken into account regarding decisions on CETPs for IEs:

- The prime purpose of wastewater treatment is to keep the desired DO levels in the range of 4–5 mg/liter in the natural water bodies. DO levels in natural unpolluted waters are commonly in the range of 7–12 mg/liter. Installation of CETPs in the IEs of Punjab will not achieve the desired DO levels in the downstream natural water bodies unless the municipal wastewater of cities is also treated simultaneously. The measureable environmental impacts of IE CETPs alone on the water quality of natural water bodies is therefore arguable. Both Kasur and Korangi CETPs discharge treated water to polluted drains, with nominal positive impact on the quality of receiving water bodies.
- River ecologies in Punjab have varied levels of assimilative capacity related to industrial pollution. The River Ravi is highly polluted near Lahore, has low assimilative capacity, and requires a higher degree of treatment of wastewater from all sources. On the other hand, the River Indus has a very high assimilative capacity and much lower wastewater treatment needs throughout its stretch in Punjab.

145. Cleaner production and energy efficiency are considered as voluntary actions by industry. Although these functions are considered as essential to PEPA 2012 compliance, the act does not cover cleaner production. As noted above, CETPs will only treat common pollutants. Industry-specific pollutants will be treated and managed through the implementation of cleaner production and energy efficiency technologies and measures.

146. Pakistan has unique experience in the promotion and implementation of cleaner production and energy efficiency technologies and measures over the last 25 years. At present, three cleaner production centers (CPC) are working in the country: Cleaner Production Institute (CPI), Lahore; National Cleaner Production Center for fuels at Attock; and CPC for Sialkot Tanneries. These centers promote cleaner production techniques and practices in the selected industrial sectors. The CPI is implementing cleaner production in all the industrial sectors of Pakistan. In addition, the National Cleaner Production Center is working with the oil and gas sector. In most cases, cleaner production techniques and practices offer complete compliance for industry specific pollutants.

147. The following cleaner production and energy efficiency projects were implemented in Pakistan:

- Water Stewardship Program (2013–2015)
- Program for Industrial Sustainable Development (PISD) (2007–2013)
- Sustainable and Cleaner Production in the Manufacturing Industries of Pakistan (2009–2012)
- Introduction of Cleaner Technologies in Punjab Tanneries (1998–2008)
- Introduction of Cleaner Production Technologies in Textile Sector (2004–2007)
- Environmental Management Program of Pakistan Tanners Association (2000–2007)
- Cleaner Production Program (2001–2004)
- Environmental Technology Program for Industry (1996–2001)
- Technology Transfer for Sustainable Industrial Development (2000)

148. Knowledge and experience generated by these projects are highly relevant to the ESSA and other pillars of the proposed program. In addition, under the PISD, SFs for the SIE, QIE, and the Generic IE SF were prepared. These provide environmental management frameworks for IEs in Pakistan and can be used as a reference documents while preparing environmental management plans for other IEs.

## SECTION 4: CAPACITY ASSESSMENT FOR MANAGING ENVIRONMENTAL AND SOCIAL EFFECTS RELATED TO INDUSTRIAL ESTATES

### Introduction

149. This section summarizes the evaluation of the capacity of program institutions to implement the program environmental and social management system. It focuses on the institutions linked directly and indirectly to the implementation of these systems. It briefly describes the background of the institutions and their mandates; hierarchical organization and its adequacy; institutional capacity with regard to staff, budget allocations, training and so on; effectiveness of inter-agency coordination arrangements and performance of the implementing agency in ensuring that the rules and procedures are being followed.

150. In an overall context, institutions exist at the provincial level to deal with environmental and social issues. However, their capacity should be increased with regard to human resources and/or financial capacity to operate the system as designed. To begin to address these capacity constraints and to close important implementation gaps, an incremental step-by-step, risk-based approach is recommended throughout the life of the proposed program.

### Environmental Aspects

#### *Environmental Governance, Institutional Hierarchy, and Monitoring and Reporting System*

151. **Environmental Protection Department.** The mandate of the Punjab Environmental Protection Department (EPD), according to the Punjab Government Rules of Business 2011, is summarized as follows:

- Planning and policymaking in the disciplines of environment and ecology
- Administration of EPA Punjab
- Budget, accounts and audit matters
- Purchase of stores, laboratory instruments, capital goods for the department and their maintenance
- Service matters except those entrusted to the Services and General Administration Department
- Administration of the following laws and the rules framed there-under:
  - PEPA 2012
  - Punjab Prohibition on Manufacturing, Sale, Use and Import of Polythene Bags
- Matters incidental and ancillary to the above subjects

152. The EPD has established the EPA under PEPA 2012. Major functions of the EPA under PEPA 2012 are summarized below:

- To implement rules and regulations prepared under PEPA 2012 and prepare additional legislation according to the needs of the province
- Prepare and implement provincial environmental standards, development of provincial systems for the implementation of pollution charges
- Conduct research and development to develop the most viable environmental technologies, and certify laboratories
- Engage local governments in the implementation of PEPA 2012, environmental awareness and incorporation of environmental issues in the educational curriculums
- Prepare provincial level Environmental Disaster Management Plans
- Collaborate and coordinate with stakeholders for the effective implementation of environmental policies and PEPA 2012
- Entertain inquiries and complaints raised by stakeholders
- Mobilize national and international financial resources for environmental projects
- Develop provincial level fiscal programs and financial incentives for environmental compliance
- Fix pollution charges, and conduct investigations against polluters
- Assist courts by generating field level environmental data about polluters
- Establish environmental laboratories, implement IEE/EIA Rules and Regulations and Guidelines, hazardous waste management under the HS Rules
- Monitor vehicles for controlling air pollution

153. According to Punjab EPA officials, the legislative framework is not complete. At present, EPA has adopted and notified only 17 rules or regulations, these regulations were prepared by Pakistan EPA, and Punjab EPD adopted them as is. The Punjab EPD is planning to establish a Directorate of Environmental Law, Policy, and Regulation. The directorate will be mandated to review the existing legislative framework and develop new rules, regulations and guidelines. An organizational chart of the EPD is attached as Annexure 1 as separate files available online.

154. The PEPC is the apex decision-making body on environmental issues in the province. It is headed by the chief minister of Punjab, and the minister of environment serves as the vice-chairman. Members of the council comprise multiple stakeholders, that is, provincial environmental ministers, 35 ex-officio representatives (industry, technical professional, trade unions, and NGOs), and the secretary of the EPD. The PEPC is required to hold meetings twice a year. The PEPC has the power to establish subject- or issue-specific committees and invite any

technical expert, government representative or NGO to support the implementation of its functions. The EPD serves as the secretariat for the PEPC. Major functions of the PEPC are to supervise the implementation of PEPA 2012, approve and supervise the implementation of provincial environmental policies, approve Environmental Quality Standards, provide guidelines for the protection and conservation of natural resource and habitats, integrate sustainable development in provincial development plans and policies, and instruct relevant institutions to execute sustainable development and research projects. It is important to note that in the last three years not a single meeting of the PEPC was held. The LHC recently instructed the EPD to call the first meeting of the PEPC.

155. The EPA is headed by a director general (DG). Four directors, that is, Director Monitoring, Investigation, and Implementation, Director EIA, Director Laboratories, and Director Planning & Coordination, are under the DG. The Punjab EPA has already established district environment offices in all districts of Punjab. At an operational level, the delegation of functions and powers to respective sections in the EPA is satisfactory. Directors of respective sections maintain an acceptable level of independence for executing their tasks. The coordination of the EPA with other departments on environmental issues is good. The EPA is represented in all the decision-making forums of the province. The EPA has implemented many projects in the past. The quality of project implementation and impact on pollution reduction is moderate. The major past projects of the EPA are:

- Feasibility study for control of dust pollution generated from stone crushing units in Sargodha District
- Monitoring of industrial gaseous emissions in Punjab
- Installation of Suspended Particulate Matter Display System in Lahore
- Development of standards and guidelines for ecolabeling of industrial products.
- Design and fabrication of pollution control units in selected industries (cotton ginning, poultry protein feed, pulp and paper and re-rolling mills)
- Feasibility study for introducing ecofriendly technologies in existing and new bricks kilns in Punjab
- EPA officials reported in a meeting that the EPA at present is predominantly involved in the Dengue Prevention Program, handling the complaints and linked court cases, processing of the EIAs, and routine organizational works

156. The Monitoring, Laboratories and Implementation (ML&I) Section is responsible for industrial monitoring for environmental compliance. Monitoring of CETPs in the province is the mandate of the EPA. The ML&I Section at present comprises a director, four deputy directors (Environmental Engineering and Technology Transfer, Research and Investigation, Laboratory-Lahore, and Laboratory-Multan), with three research officers for air, water, and solid waste. Research officers are amply supported by chemists and research assistants and other support staff. The qualifications and competence of ML&I Section staff are based on the requirements of the job. If the correct approach for NEQS compliance is adopted, monitoring of industrial units is strategically designed, and monitoring is conducted with the assistance of the EPA district

offices, then the existing capacity is sufficient for effective industrial monitoring at the provincial level.

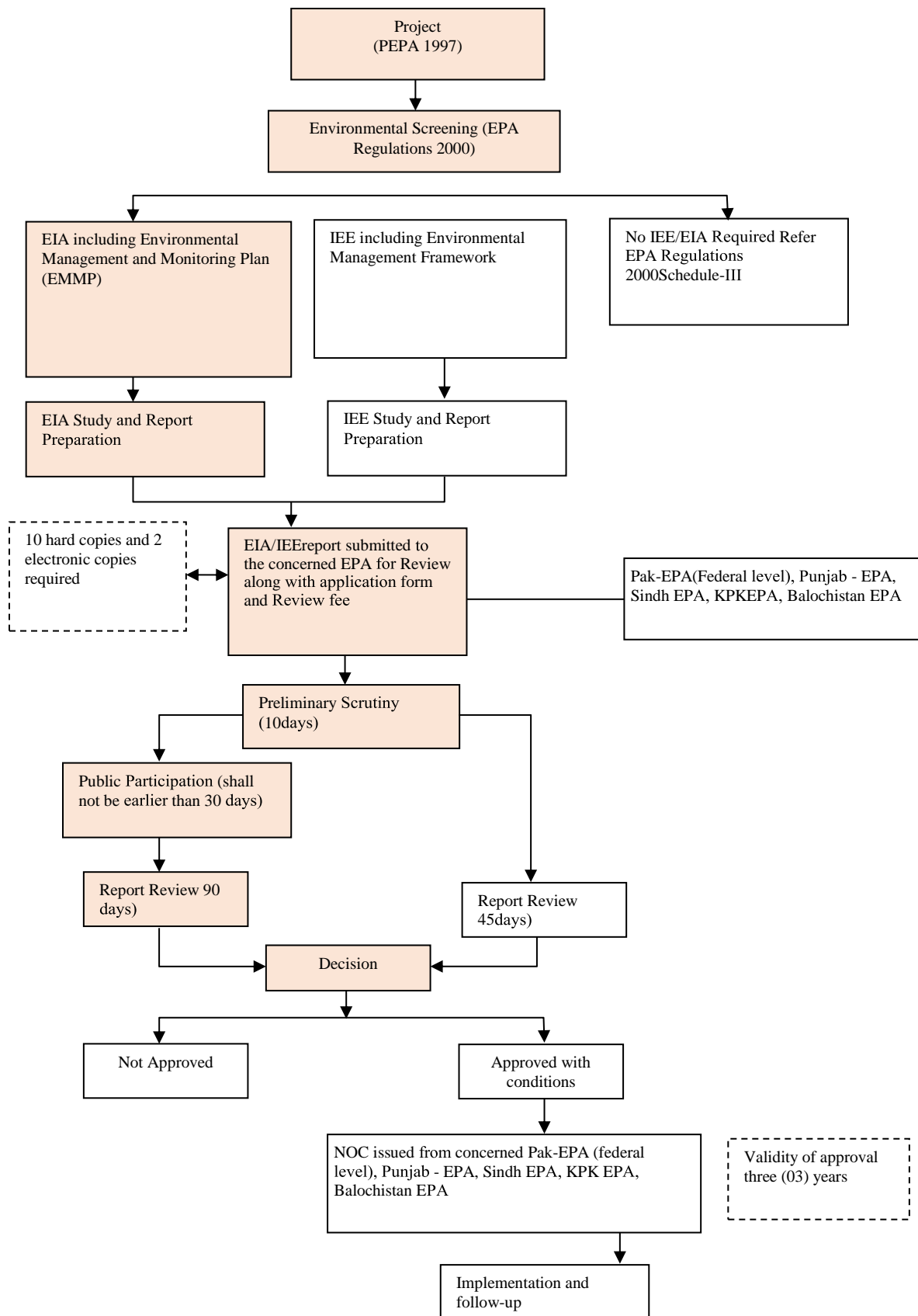
157. The EIA Section is responsible for the processing of IEE/EIA applications and monitoring of IEE/EIA implementation. The EIA Section receives a large number of EIA applications, as well as environmental complaints. There is only one director, one deputy director, three inspectors, and one subengineer to handle this workload. Considering the scope of work linked to IEE/EIA, from application processing to project completion certificate established under Pakistan EPA (Review of IEE/EIA) Regulations 2000 and IEE/EIA Guidelines, the existing team is assessed as small. A large number of applications could only be processed because the section officials did not make field visits before and after project implementation. The quality of public hearings organized by the EIA Section can be assessed as good. Figure 2 presents the schematic diagram of the typical EIA process in practice by the Section for the evaluation of EIA reports. The scope of an EIA is attached as Annexure 2 as a separate file available online.

158. As noted earlier, the Supreme Court of Pakistan has recently established Green Benches in the High Courts, which, following the complaints of civil society organizations, are putting pressure on the EPAs to ensure that all public sector projects go through the process of EIA preparation and approvals. The government of Punjab, due to political reasons, is operating in a fast track mode for the execution of development projects. Compliance with PEPA 2012 is mostly treated at a cursory level. Therefore, many government of Punjab projects have been involved in litigation in the courts, following complaints from civil society organizations. A recent example is the signal free project for Jail Road and Main Boulevard Gulberg, which was delayed for more than eight months for not conducting an appropriate EIA. The Lahore High Court stopped the execution of the project, and instructed the Lahore Development Authority to conduct the EIA. This confirms the assessment that the EIA Section needs to increase its capacity.

159. The Laboratory Section is properly staffed and the existing laboratory is partially functioning. The analytical capacity of the laboratory is limited. This section needs capacity development for effective management and implementation of the heavy mandate linked to its operations. The Laboratory Section needs to coordinate and certify other laboratories in research and academic institutes and the private sector in the province, to increase overall environmental testing capacity. The Punjab EPA is planning to establish an independent ERMC. The ERMC will focus on gathering environmental monitoring data on environmental parameters, enforcement of environmental standards, and function as the central body for the analyses of environmental samples gathered by the division and district offices.

**Figure 2. EIA Evaluation Process in Practice by EIA Section**





160. The Planning and Coordination Section is properly staffed. The planning and coordination mandate is comprised of effective coordination with the provincial departments, Pakistan EPA, National Environmental Coordination Committee, and stakeholders. The Planning & Coordination section is responsible for issuing EPOs. EPOs issued by this section frequently were not adequate and ended up at the Environmental Tribunal (ET). In a large number of such cases, the ET ruled against the EPD due to trivial mistakes in the EPOs. The section's capabilities need to be improved through training on the subjects of planning, management, and coordination.

161. The federal government issued the NEQS (Self-monitoring and Reporting by Industry) Rule in 2001. Under the rules, all industrial units are instructed to submit the Self-monitoring and Reporting Tool (SMART) reports according to the requirements of industry categories in which their unit is placed. User-friendly software was developed for reporting the data in electronic form. The data so entered could be sent to the respective EPA through email or disk.<sup>16</sup> The federal EPA was given the mandate of compiling, analyzing, and managing the data contained in the SMART reports with the objectives to enforce the NEQS and develop an environmental database.

162. The response from industry is not encouraging. Out of 8,000–10,000 industrial units, less than 150 are registered and reporting under the SMART program at the country level. Most of the SMART reports were submitted by industries belonging to four sectors, that is, oil and gas, chemical, pharmaceutical, and power generation. Pakistan's major industrial sectors, such as textile, sugar, and leather are weakly represented.

163. The major reasons behind the low level of participation from industry in the SMART program was the lack of trust between industry and the environmental agencies, lack of capability and capacity of the EPA, limited allocation of resources, and generally low level of enforcement of environmental legislation in the country. EPA officials are of the opinion that the effectiveness of the SMART program can be enhanced by taking following steps:

- Fix realistic annual and long term targets
- Intensify consultation with the industry associations
- Disseminate success stories
- Increase the user-friendliness of SMART software
- Strengthen SMART cells in the EPAs
- Increase financial allocation by the provincial government

164. It is assessed on the basis of prevailing low level of PEPA 2012 enforcement, and unwillingness of stakeholders to implement SMART that the prospects for program implementation are low. It seems that the idea came before its time. The SMART program can

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<sup>16</sup> Pakistan Environmental Protection Agency. "SMART: Self Monitoring and Reporting Tool Information Package." Ministry of Environment. Government of Pakistan.

become more meaningful if PEPA 2012 is effectively enforced, and stakeholders' implementation of environment and energy solutions improves.

165. The EPD has prepared the Punjab Conservation Strategy (PCS). It was planned that the PCS would serve as the environmental policy of the province. It was financed by the government of Punjab and provides an environmental profile of Punjab at an acceptable level, although limited by the fact that it is predominantly based on secondary information. Measures contained in the PCS for industrial environmental management are in line with the overall strategy for the province and include the following:<sup>17</sup>

- Strict actions should be taken by the EPA for discharge of toxic metals from industries and pollution charges should be levied for the discharge of toxic metals. Industries should be instructed to implement cleaner technologies such as caustic recovery and chrome recovery plants (CRPs).
- Hazardous industries should be shifted from residential areas to IEs.
- CETPs should be constructed at all the drains. Large industries not located in industrial clusters and estates such as pulp and paper mills and sugar mills should be instructed to install individual treatment plants.
- The implementation of SMART should be enhanced.
- IEs should be developed and future expansion of industrial activity should be located in IEs.

166. At this time, the PCS has not yet been approved due to concerns over quality issues. The Punjab EPD has no comprehensive environmental policy for the province.

167. The following activities are to be included in Project Concept-1 for incremental strengthening the EPA:

- Preparation of studies and bid documents for the establishment of a modernized and fit for purpose MIS to facilitate the EPA in carrying out all its functions.
- Establishment of the ERM and advanced certified laboratory.
- Development of industry-specific pollution abatement standards and detailed rules and regulations for the implementation of PEPA 2012.
- Human resources (HR) capacity assessment, development of specific and relevant training curriculum and completion of training for identified technical staff at all levels of the EPD/EPA.
- Carrying out of an inventory of industrial solid and hazardous waste for the major cities of Punjab.

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<sup>17</sup> Environmental Protection Department. "Punjab Sustainable Development Strategy." Final Report, June 2008.

168. **Environment Section, P&D Department - Punjab.** P&D Punjab has established a small Environment Section and detailed discussions were held with the chief of that section, who is also responsible for the operations of eight other sections of P&D. The main aim of the Environment Section is to incorporate environmental concerns in all the development policies and projects of the province. The chief of the section informed that the Environment Section is satisfactorily meeting the work load, although there are technical capacity constraints. In this regard, he noted the serious need to conduct environmental training of all key officials of the P&D sections.

169. **Directorate of Land Reclamation - Punjab (DLR).** DLR works under Irrigation and Power Department - Punjab. DLR publishes the annual 'Surface Water Quality Monitoring in Punjab Report'. The report is based on annual testing of surface water at strategic locations and establishes the suitability of surface water for different uses. DLR also published the 'Atlas of Surface Water Industrial and Municipal Pollution in Punjab' in 2008. The atlas categorized industrial effluent into fit and unfit to discharge categories on the basis of pollution loadings. It also provided a roughly estimated quantity of effluent discharged at the industrial unit level. DLR has well established infrastructure for surface water monitoring. Engaging DLR in the program will provide access to a large set of data on the ambient quality of surface waters in Punjab. This will be highly useful for establishing hot spots of industrial pollution and ambient environmental standards for Punjab.

170. **Industry Department Punjab.** The Industry Department has not established an Environment Section. Functions of the Industry Department include the management of IEs. In this regard, existing and future CETP projects come under its mandate. Future environmental compliance and improved environmental health of water bodies predominantly depends on the construction of CETPs in the IEs and other informal industrial clusters. It is proposed that the Industry Department collaborates with the EPA for periodic environmental monitoring, and preparation, development, and implementation of proposed SFs for IEs. In addition, the key officials of the Industry Department need to be trained on environmental issues.

171. **Local governments and Water and Sanitation Agencies.** The local government can play a very important role in managing local environmental issues of SMEs. At city level, water and sanitation agencies are natural candidates for the implementation, and operations of CETPs for municipal wastewater treatment. Such agencies have not implemented any CETP in any Punjab city. A substantial amount of pollution is contributed by municipal sources. Municipal water also provides opportunities for dilution of industrial wastewater, which can help to decrease the cost of treating the industrial wastewater. The dilution potential as a function of treatment can be best achieved by promulgating ambient standards.

172. **Industry Development and Management Companies.** The government of Punjab has also established three IE management companies, that is, the PIEDMC, FIEDMC, and PSIC. Sialkot Tanners have established the Sialkot Tanners Guarantee Limited. Boards of these companies are chaired by industrialists and membership is distributed among public and private sector representatives.

173. **The PIEDMC has developed and is managing many existing and new IEs in the province.** The SIE is its flagship. The PIEDMC has successfully upgraded infrastructure in development of the QIE and MIE. The government of Punjab has given the PIEDMC a target of construction of one IE in each district of the province. The PIEDMC has included the installation

of CETPs; sanitary landfills, and power houses in each IE, although it made a strategic mistake at the planning stage of the SIE in that it did not include the cost of environmental infrastructure in the price of developed industrial plots. At that time, the provincial government made finance the capital cost of environmental infrastructure and member industries committed that they would pay the operational charges. However, for the last ten years, however, the government of Punjab has found it difficult to finance the environmental infrastructure for the SIE due to scarcity of financial resources. Detailed design of the CETP has been completed, the PIEDMC did the tendering, and at the final stage the government of Punjab was not able to provide funding. Work on the CETPs for the QIE and MIE also stopped due to the nonavailability of funds from the government of Punjab.

174. The FIEDMC was subjected to the same process as in the above cases. The FIEDMC hired consultants to design the CETP. Detailed designs have been prepared but further work has been stopped due to nonavailability of funds from the government of Punjab.

175. **The PIEDMC and FIEDMC each have an environment section staffed by one person.** Both companies have made contractual agreements with their member industries that industries will comply with the environmental management systems stated in their EIA reports and the environmental management systems of the IEs. Members are contractually bound to pay charges for environmental services. It is assessed that the top management of both companies is well aware of environmental issues, compliance with PEPA 2012, and with other international environmental requirements.

176. **The PSIC has the least environmental awareness.** The director of PSIC reported that IEs under the PSIC do not cause any environmental problem, there is no need for conducting an EIA and securing an NOC from the EPA, pollution levels are very low and CETPs are generally not required for small IEs. He added that PSIC and its IEs never received any notice from the EPA, and none of its officials attended environmental training.

177. **Industrial Estates Boards of Management (nominated or elected).** All IEs have established the Board of Management (BOM). The BOMs comprise nominated representatives. It is expected that future formation will be election-based. The role of the BOM is very important in the operation of IEs and CETPs. They can play a critical role in facilitating the member industries to contribute to capital and O&M costs of CETPs. They can also facilitate implementation of cleaner production and energy efficiency measures by member industries to comply with industry specific toxic metal requirements. The BOMs need to be strengthened for the development and implementation of the SFs for the IEs.

178. **Industry sector specific industrial associations.** Sector-specific industrial associations can help to mobilize their members to shift industries to IEs. Associations can negotiate with the government about the resettlement mechanisms and conditions. In this regard, the most important case in the province is Faisalabad IE. The occupancy of the estate can be substantially increased, if the government engages All Pakistan Textile Processing Mills Association. The same type of role can be played by Pakistan Tanners Association chapters in Multan and Sialkot IEs.

179. **Environmental tribunals.** The federal government established four ETs, one in each provincial capital, under the authority established by Section 20 of PEPA 1997. The government of Punjab maintained the ETs under PEPA 2012. Under PEPA 2012, the ETs have

comprehensive powers to take decisions. Each ET includes a chairman, with a credential of qualified high court judge, one technical person with suitable professional qualifications and experience in the environment field, and one person with qualifications and experience in the discipline of law. For every sitting of the ET, the presence of the chairperson and not less than one member shall be necessary.

180. In a study<sup>18</sup> conducted by the Bank in 2010, the ETs of four provinces were interviewed. The study reported that the ETs were not satisfied with the legal powers available to them. They stated that the ETs can only order punishment, but from then onward it is the responsibility of the EPA to implement it. In most cases, the EPA does take any action. The ETs have no powers to do field monitoring, which is also the responsibility of the EPA. In most cases, if any government agency is involved, then the EPA does not bring the case to the ET. Representatives of the ETs proposed that they should get suo-moto powers because ETs cannot take any action on their own, and are dependent on the EPA. In addition, respondents stated that they can only fine, whereas they believed ETs should also have power to imprison, to declare contempt of court, and to implement their orders. They added that PEPA 1997 does not provide an efficient implementation framework for implementation of ET orders. It was reported in the study that EPOs submitted by the EPA are mostly defective.

181. **Green Benches.** On April 7, 2012, LHC under the instruction of the Supreme Court of Pakistan established Green Benches at Lahore and Rawalpindi. Under this order, LHC judges, district and session judges, and senior civil judges serve as Green Benches. These benches are mandated to hear all cases related to environmental issues. The Chief Justice of LHC nominated a senior judge of Lahore High Court to grace the single Green Bench at LHC principal seat and a division bench, comprising two senior judges has been constituted as Green Bench for environmental cases. Further to this, LHC Chief Justice also instructed the senior judges of Multan, Bahawalpur, and Rawalpindi benches to hold the court as a single bench and two senior most available judges to hold court as Division Green Bench. According to another notification, all the courts of senior civil judges and all the courts of civil judges cum judicial magistrates at subdivision level have been declared by Chief Justice as green courts so as to hear all the cases under PEPA 2012 as well as under ordinary jurisdiction that involve environmental issues or relate to environment interest litigation. At the district level, district and session judges in Punjab have been declared as green courts so as to hear all the cases, appeals and so on under the PEPA 2012. The Chief Justice has ordered the transfer of all environment related cases to the Green Benches of the LHC and green courts at district and tehsil level from the courts where they are pending at the moment for further proceedings. At present, many civil society organizations are approaching Green Benches against the government of Punjab projects in lieu of quality and preparation of EIAs of the projects. In one of its decisions, the Green Bench instructed the EPA to hold a PEPC meeting.<sup>19</sup>

### ***Performance Assessment of Environmental Institutions***

182. Environmental governance in Punjab goes only marginally beyond preparation of legislation and policies, and establishing environmental institutions. Generally, the reasons are:

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<sup>18</sup> Ministry of Industry, "Evaluation of Industrial Environmental Management-Pakistan" study was sponsored by the World Bank, 2010.

<sup>19</sup> Associated Press of Pakistan, April 7, 2012.

overall poor governance in the province, fluctuating business performance of industry, low level of societal demand for better environmental quality, and low level of capacity of environmental agencies for the enforcement of environmental laws. More precisely for NEQS compliance, reasons for poor enforcement of PEPA 2012 are no enforcement of pollution charge rules and Punjab Social Development Fund (PSDF), and PEPA 2012 does not provide legal cover to cleaner production and energy efficiency, which is the mainstay for compliance with the NEQS for toxic metals, air pollutants, hazardous waste and occupational health and safety.

183. Regarding an EIA/IEE, the EPA is relatively successful in the enforcement of applicable rules. At present, most of the proponents of new projects prepare the EIA/IEE reports to secure NOCs from the EPA. However, absence of follow-up monitoring is one of the most important reasons behind the low level of implementation of the EIA/IEE reports. Multilateral and bilateral institutions such as the Bank, Asian Development Bank, U.S. Agency for International Development (USAID), and United Nations Development Programme have contributed positively in promoting the culture of an EIA/IEE in the country.

184. Although a lot of effort has gone into the dissemination of environmental information and training of government institutions in the last ten years, gaps still exist. It is proposed that the program include a three year “Training and Dissemination” component focused on training and dissemination in the institutions of the government of Punjab and IE companies. The EPA should be the executor of the component. It can hire the services of environmental experts and CPIs operating in the province. Following are the proposed thematic areas for the training and dissemination:

- PEPA 2012
- Environmental Impact Assessment
- Cleaner Production and Energy Efficiency
- SFs for IEs
- ISO 14001 certification
- Occupational Health and Safety
- Factory Act, Labor Act, and other relevant legislation

185. Capacity-building training activities are also proposed for other public sector institutions. To mitigate the low level of capacity in stakeholder institutions, a Public Sector Environmental Training and Dissemination Project is proposed. The project would develop institution specific training manuals on the basis of a need assessment of institutions. Main participating public sector institutions would be the Environment Section in P&D, Ministry of Industry, DLR, Directorate of Finance, local government, industrial management companies, PSIC, BOMs of IEs, industrial associations, ETs, and Green Benches of the High Courts. Joint training of stakeholders would also be organized on common issues for increasing understanding and coordination among stakeholders.

### *CETPs for IEs to Treat Common Pollutants*

186. The proposed program will establish one CETP in each of two IEs of the province. A main purpose of the proposed CETPs is to demonstrate a complete scheme of CETP implementation and operations to stakeholders as a model for NEQS compliance, financing, and sustainability as an institution. The following criteria is proposed for the selection of the IEs for which CETPs can be considered for installation:

- High-pollution load is generated by the IE
- The member industries of the estate can afford and are committed to pay back the loan over the agreed timeframe
- The estate should offer high demonstration potential for other IEs
- Minimum 60 percent of the estate is occupied by the operational industries

187. The biggest challenge to be faced by this component of the program will be to break the grant-driven-mindset of IE management companies and their members for the financing of CETPs. Discussions with the PIEDMC, FIEDMC, PSIC, and Sialkot Tannery Zone (STZ) project revealed that IE management companies expect grants from the provincial government and international donors. The representative of the STZ informed that the capital cost of the CETP is US\$13 million. The Global Environment Facility through United Nations Industrial Development Organization has committed to provide US\$3.3 million under technology transfer window. The STZ management has applied for US\$6 million from the Export Development Fund of Pakistan. The management of the company expects that these funds will become available within one year. It is expecting to generate the balance of US\$3.7 million from some other donors. If the STZ successfully generates CETP funding through grants then it will be a serious setback to financing other CETPs in the province under a loan arrangement. It is important that this issue be discussed with the government of Punjab to ascertain its position on the subject.

188. The program will adopt a facilitative and competitive approach as set forth by the PPP Act. All stakeholders (government of Punjab, management of IEs, member industries, EPD/EPA, and partner financial institutions) need to be taken on board.

189. IE companies should be responsible for establishment of CETPs. It is proposed that the following conditions be applied to the design, construction, commissioning and operations of CETPs:

- CETP design, construction, commissioning and operations should be outsourced to consortiums of international and local companies following an international competition as mandated by the PPP Act.
- Partnerships between international and local companies will be encouraged. For example, the winning company will take the lead in the first three years and over the following two years will transfer the operating system to the local company; the local company will operate the plant under the supervision of the international company during the transfer.



- Contract conditions for the operator companies should be developed on the basis of international SOPs for such projects.
- To break future monopolies and create healthy competition among operator companies, the international companies should be given the task of hands-on technology transfer and training to local contractor companies in the province.

190. It is anticipated that at least two years' consultation and facilitation will be needed to mobilize the IE management and member industries to contribute in capital cost, prepare to take loan, take the responsibility of paying O&M costs (inclusive of partial capital cost), and determine the contribution rates of each member. The Korangi CETP, for example, took three years to achieve consensus among tanners on the issue of capital and O&M cost contributions.

191. Establishment of the CETP might start in the third year of the project. Construction and commissioning of the CETP will be completed in three years.

192. The estimated cost of two CETPs will be about US\$67 million. The PforR will contribute about US\$54 million for supporting PPPs for upgrading existing IEs and developing CETPs, with most of the support expected to go toward PPPs. This should be sufficient to support at least two CETPs given the expected contributions by the IEs and member industries as equity share. Data sheets collected from the IEs are attached as Annexure 5 in a separate file available online. Table 11 presents the status of IEs under the abovementioned selection criteria. A simple method of scoring 0 to 10 is adopted for ranking the IEs. It is assumed that each criterion has equal weight in the selection of the IE for the installation of the CETP.

**Table 11. Status of IEs under the Selection Criteria**

Industrial Estate	Selection Criteria					Total Score
	Pollution Load	Export Industry	Affordability for the CETP	Demonstration Potential	Occupancy Rate	
QIE	8	5	8	9	10	40
SIE	8	3	10	10	8	39
Kasur Tannery Cluster	10	10	2	6	10	38
Multan IE	10	6	6	5	6	33
Sialkot New Tannery Zone	10	10	8	8	0	33
Faisalabad IE-FIEDMC	7	8	8	8	2	33
Faisalabad IE-PSIC	5	5	2	4	8	24

193. The ranking presented in the table 11 should be treated as a starting reference point. It is suggested that the government of Punjab invite all the mentioned IEs for consultations and finalization and share with them the expectations with respect to their CETP PPP proposals with respect to their technical, economic and financial viability which will have to be thoroughly analyzed and established as part of the feasibility studies. These feasibility studies, once approved by the PPP Steering Committee, will constitute the basis for conducting the investor roadshow and organizing the competition, which will be based on amount of subsidies asked by the bidders (the lowest bid wins as long as it meets the minimum technical and eligibility criteria.

### ***Compliance with Other Standards: Specific Pollutants, Air, and Solid & Hazardous Waste***

194. In addition to treating common pollutants of wastewater, IEs have to comply with standards for specific wastewater pollutants (toxic metals), air, solid waste, and noise.

195. **Specific Wastewater Pollutants.** As mentioned above, CETPs only treat common pollutants. Industry-specific pollutants will be treated and managed through the implementation of cleaner production and energy efficiency technologies and measures. The most popular and successful method of compliance on a specific pollutant is the installation of CRP in tanneries. CRP recovers about 90–98 percent of the chrome from chrome liquor. The capital cost of CRP per plant is in the range of US\$15,000–US\$20,000. The payback period is in the range of 8–12 months. Similar technologies for recovery, treatment, and NEQS compliance of specific pollutants have been implemented by few industries. It is proposed that cleaner production technologies be promoted in the IEs through implementation of the SFs. Details of the SFs are presented in the section on voluntary actions .

196. **Air pollution.** See discussion in paragraph 88. Cleaner production and energy efficiency solutions need to be promoted further. Management of the IEs should make internal monitoring arrangements for the compliance of ambient environmental standards promulgated under PEPA 2012.

197. **Solid and hazardous waste.** See also paragraphs 86 and 87. Under SF implementation, the IEs should take following actions for the proper management of industrial solid and hazardous waste:

- Promote and implement technologies for reuse and recycling of hazardous waste within the industry
- Promote better occupation health and safety practices for handling hazardous chemicals and wastes
- Establish sanitary landfills for large IEs
- Establish hazardous waste management facilities for Lahore and Faisalabad cities

198. Implementation of the first three policies will be covered under above SF implementation. Provincial and city governments in Punjab have to date not establish sanitary landfills at the city level. Detailed feasibility studies should be prepared for the major IEs in the province. At present, not a single international standard facility is available in Pakistan for safely managing hazardous waste. The EPA in collaboration with Solid Waste Management Company and industrial management companies should conduct the following diagnostic studies for the management of industrial solid and hazardous wastes for each industry in the province:

199. The following capacity-building activities have been agreed between the mission team and P&D:

- Preparation of a prefeasibility study report for sanitary landfills in Punjab. Given that there are no sanitary landfills in the province, safe disposal of solid waste is still a big problem in cities of Punjab. Relevant to the program, the solid waste generated

by CETPs will also need to be safely disposed of. This proposed study will examine sustainable and viable options for the construction, O&M of sanitary landfills for the major cities of Punjab, and will make recommendations for developing bankable projects.

- Preparation of prefeasibility study report for industrial hazardous waste management and safe disposal facilities for the major cities. Safe disposal of industrial hazardous waste needs special facilities, which do not exist at present in the province. This proposed study will examine sustainable and viable options for management, including options for safe disposal of industrial hazardous waste for the major cities of Punjab, and will make recommendations for developing bankable projects.

200. These studies should be outsourced by the EPA to consortiums of international and local companies with the international company taking the lead.

### ***Voluntary Actions***

201. Major unsustainable practices in IEs in Pakistan are: lack of effective environmental management planning, operation in open loop, lack of funds for environmental and social welfare, poor compliance with laws, provision of direct and indirect subsidies by the government, and lack of a SF for operation and management. Most of these practices can be improved by adopting system development under a planning and execution framework. Knowledge and experience generated by the cleaner production and energy efficiency projects mentioned earlier are highly relevant to the program. The PISD developed a ‘Generic Industrial Estate Sustainability Framework’ for all the IEs in Pakistan. In Punjab, the SFs were prepared specifically for the SIE and QIE. These can be used as reference documents while preparing the SF for all IEs in the province.

202. A Sustainable IE or its synonym ‘Eco Industrial Park’ is defined as ‘An industrial system which conserves natural and economic resources; reduces production, material, energy, insurance and treatments costs and liabilities; improves operating efficiency, quality, worker health and public image; and provides opportunities for income generation from use and sale of wasted material.’<sup>20</sup> Most popular international practices for making IEs sustainable are through industrial synergies or symbioses in the following forms:

- Supply synergies feature local manufacturers and dedicated suppliers of principal reagents for core process industries (for example, production of ammonia and chlorine for industrial use);
- Utility synergies feature shared use of utility infrastructure, mainly revolving around water and energy (for example, water recovery and energy cogeneration);
- Byproduct and waste synergies feature the use of a previously discarded byproduct (as solid, liquid, or gas) from one facility by another facility to produce a valuable product

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<sup>20</sup> Côté, R.P., and J. Hall. 1995. “Industrial Parks as Ecosystem.” *Journal of Cleaner Production*..

- Service synergies feature sharing of services and activities between industries in an industrial area (for example, joint training of staff and sharing of maintenance contractors).

203. A SF objectively targets implementation of the following actions:

- **Legal compliance.** The IE and member industries comply with all legislation relevant to the establishment and operation of the IEs;
- **Maximization of resource efficiencies and money saving.** Design and operation of the IE to reduce, recover and recycle resources, while reducing production costs and increasing business revenues.
- **Collaborative business opportunities.** Industries working together to achieve synergies (for example, supply chain, shared utilities, waste and by-product exchanges between companies) and associated cost savings.
- **Smarter design and operation of IEs.** Efficient design and operation of IE to reduce risks, infrastructure costs, and facilitate effective resource movements within and to/from estate.
- **Minimized short- and long-term risks.** Industrial estates designed and operated to minimize business, environmental and social risks. Environmental and social risks can result in significant costs to industry.
- **Government requirements and community expectations met.** Ensures the short-term and long-term license-to-operate of the estate through a collaborative industry, government, and community approach.

204. In the last 15 years more than 60 countries in Africa, Asia, Australia and South America have established eco-industrial parks. Japan alone established thirty. Table 12 presents the potential sustainable development strategies for IEs. Figure 3 presents the overall structure of a generic framework for IEs.

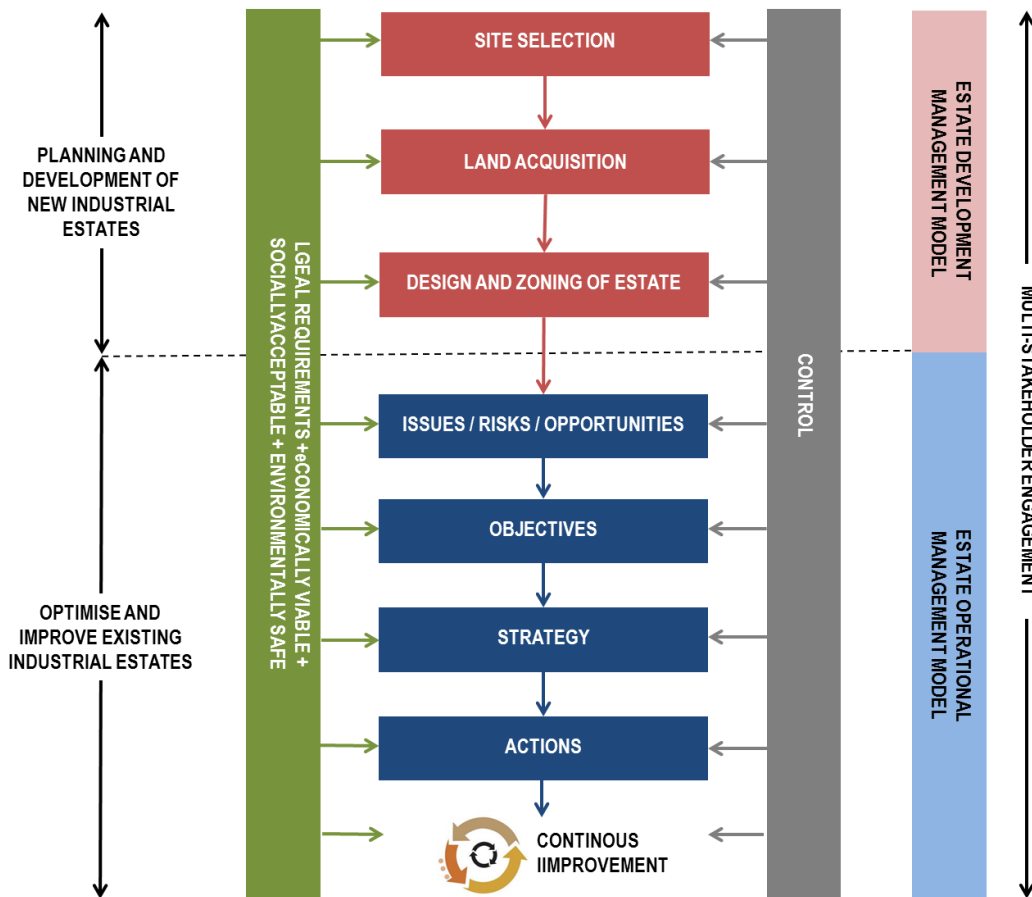
**Table 12. Potential Sustainable Development Strategies for IEs**

<b>Strategy</b>	<b>Practical Examples</b>
Materials	<ul style="list-style-type: none"> <li>• Byproduct synergies</li> <li>• Shared buying</li> </ul>
Transportation	<ul style="list-style-type: none"> <li>• Shared transport systems</li> <li>• Common vehicle maintenance</li> </ul>
Human Resources	<ul style="list-style-type: none"> <li>• Flexible employee assignment</li> <li>• Training</li> </ul>
Information/Communications Systems	<ul style="list-style-type: none"> <li>• Joint management systems</li> <li>• Monitoring systems</li> </ul>
Quality of life /Community	<ul style="list-style-type: none"> <li>• Integration work and recreation</li> <li>• Community programmes</li> <li>• Public participation and collaboration</li> <li>• Mandatory job quotas for local population</li> </ul>
Energy	<ul style="list-style-type: none"> <li>• Energy efficient buildings</li> <li>• Cogeneration systems</li> </ul>

Strategy	Practical Examples
Water	<ul style="list-style-type: none"> <li>Joint wastewater systems</li> <li>Joint supply systems</li> </ul>
Marketing	<ul style="list-style-type: none"> <li>Recruiting new companies</li> <li>Accessing “Green” markets</li> </ul>
Environment, Occupational Health and Safety	<ul style="list-style-type: none"> <li>Joint regulatory permitting</li> <li>Health &amp; safety programs</li> </ul>
Production Process	<ul style="list-style-type: none"> <li>Cleaner production</li> <li>Technology sharing and integration</li> </ul>

Source: Generic Sustainability Framework for Industrial Estates, CPI.

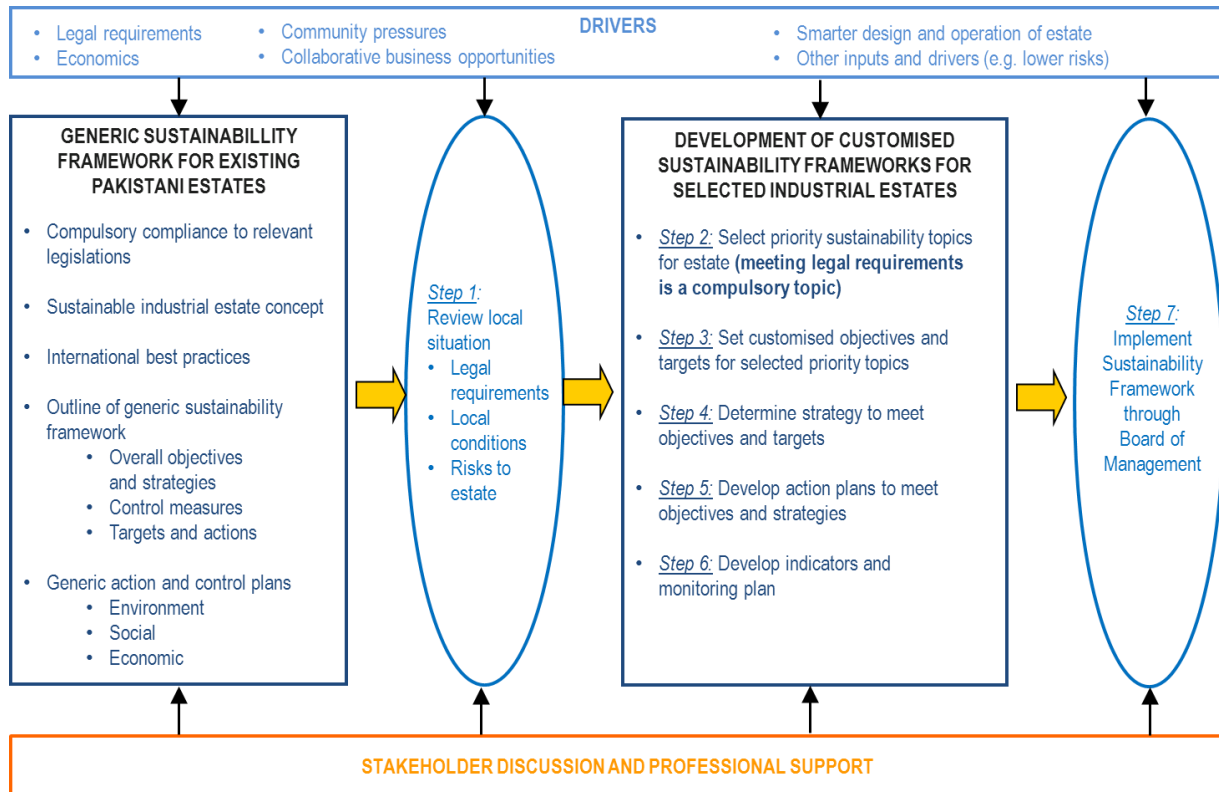
Figure 3. Schematic Diagram of Sustainability Frameworks for Existing and New IEs



205. The important topics covered by the generic SF are legal compliance, wastewater treatment, air pollution and solid waste management, occupational health and safety issues, access to safe drinking water, energy efficiency and conservation, return on investment for the development of IEs, collection of O&M costs, public transport, cost effective and comfortable labor colonies, basic health facilities, cost effective and hygienic canteens, development of basic amenities, security and emergency services, local employment opportunities, and landscaping.

206. Figure 4 presents the process to operationalize the generic SF for existing IEs in Punjab.

**Figure 4. Process to Operationalise Generic Sustainability Framework for Existing IEs**



Source: Generic Sustainability Framework for Industrial Estate, Cleaner Production Institute.

207. It is proposed that all IEs develop, adopt and implement the SFs for achieving long term environmental and other legal compliance, and increasing their competitiveness. The SFs deliver better results if these are incorporated in the early stages of IE development. The project management unit of the PforR, in collaboration with IE management companies, EPA, and the Industry Department should start the process of development and implementation of the SFs in the IEs. TA should be provided as needed for the development of estate-specific SFs.

208. It is proposed that in the first two years, the SFs for all the industries would be prepared, and in the next three years these would be implemented. Effective implementation of the SFs requires the services of an international CPI (preferably from a developed country) and the CPI-Lahore, and CPC-Sialkot. The major tasks of CPIs would be to develop the SFs in consultation of IE companies, BOMs, and the EPA, facilitate and assist IEs in the implementation of the SFs, conduct training and organize dissemination seminars for the officials of IE management companies, BOMs, member industries, and officials of the EPA, Industry Department, and P&D Department.

209. Many SMEs are located outside of IEs. The cleaner production and energy efficient projects mentioned included the major sugar, paper, tanning and textile industries. SMEs from other industry sectors have not received such TA. Most are not efficient in use of resources and energy and contribute a substantial share of wastewater, air, and solid waste pollution. It is recommended that a four-year CEEP should be started under the PforR. The focus of the CEEP should be to provide training to SMEs on cleaner production and energy efficiency practices, and large scale dissemination of the same through seminars, leaflets, brochures, manuals, posters and

a media campaign. The program should be executed under the umbrella of the Punjab EPA. The EPA should hire the services of consortium comprising an international CPC and local CPCs.

### ***Assessment of the Idea of EPD Public Limited Company for the Operation of CETPs***

210. The EPD is not a natural candidate for establishing a public limited company for the operations of CETPs. The institutional design for CETP operations on an IE is a complex issue. Discussion is needed since responsibilities should be allocated to those institutions whose mandates best correspond to the task. The EPD is a regulatory and monitoring organization. It should focus on its mandate and do it effectively.

211. Another question is whether there should be centralized institutional arrangement, decentralized at CETP level, or a hybrid of the two. This needs to be carefully considered. It is a complex issue and it should be handled in such a way as to resolve the complexity in detail.

212. **Public limited company for the operations of CETPs.** The formation of a dedicated public company for the management of CETP operations was discussed with the EPD, which reported that such a company could be established along the same lines as the Waste Management Company that has been established. There are trade-offs to different approaches. For example, the CETP is the responsibility of the IE management companies and these companies should be implementing and operating CETPs based on their responsibility. Centralizing the CETP implementation function in one company may have greater risk. If IE companies are given the mandate to implement CETPs, it would increase ownership, provide institutional strengthening, and encourage performance competition among IE companies.

213. **Potential of private companies as operator companies for CETPs.** At present, there are no private operator companies for CETPs in Pakistan. There are many companies involved in turnkey projects at the industrial unit level for the construction of wastewater treatment plants. These companies are the best candidates to assume responsibility for a CETP. It should be noted that a CETP is an expensive asset with much disposable and consumable equipment. The owners of the asset need to establish strong accountability, transparency, and management contracts with the operator companies. Outsourcing of CETP operations has advantages but it involves many performance and reporting conditions.

214. In sum, the idea of operator companies does not qualify as a straightforward solution for sustainable operations of CETPs. International experience needs to be brought to Pakistan on the subject.

### **Social Aspects**

#### ***Existing Institutional Setup for Addressing Social Issues***

215. The main institutions involved in the management of social aspects of the program are briefly discussed below.

216. **Environmental Protection Department, Punjab.** The EPD was established to combat environmental degradation. The EPD, Punjab created the EPA which is responsible for the protection, conservation, rehabilitation and improvement of the environment; the prevention and

control of pollution; and promotion of sustainable development in the province. In this context, the EPA is also responsible for the management of social aspects as they pertain to environment.

217. The EPA performs its functions through various sections of the agency working together to meet its collective goals. These sections include

- Administration Section
- Complaint Section
- Environmental Approval Section
- Environmental Laboratories Section
- Implementation Section
- Legal Section
- Research and Investigation Section
- Technology Transfer Section
- Directorate Environmental Health, Dengue Control & Hazardous Waste

218. Among the above, the Environmental Approval and Complaint Sections are important from the social perspective of the program and have the functions discussed below.

219. **Environmental Approval Section.** The main functions of this section are

- To review the IEE/EIA reports of the project
- To conduct the public hearing in EIA cases
- To issue Environmental Approvals
- To monitor the conditions of the Environmental Approvals
- To initiate the required actions against the proponents in case of noncompliance of conditions of the Environmental Approvals.

220. **Complaint Section.** A complaint cell is established under the Complaint Section for addressing public complaints regarding environmental pollution. This section of the EPA is responsible for

- maintaining a record of public complaints received by the Office of the DG, EPA Punjab and subsequent actions taken to find solutions to these issues and
- processing all grievances regarding environment received at the online petition cell of the Chief Secretary, Punjab



221. **Board of Revenue, Punjab.** The BoR is the successor of the Office of the Financial Commissioner. It was originally constituted under the provisions of West Pakistan Board of Revenue Act, 1957, which on dissolution of one unit in 1970, became the BoR, Punjab.

222. The functions of the BoR include the following:

- It is the controlling authority in all matters connected with the administration of land, land taxation, land revenue, and preparation, updating and maintenance of records.
- It is the highest Revenue Court and custodian of the rights in land of all the right-holders.
- It exercises general superintendence and control over the revenue officers and revenue courts in the province and has suo-moto jurisdiction

223. The board consists of the following main departments/functional units:

- Revenue Department
- Colonies Department
- Consolidation Department
- Relief Department

224. The BoR is the controlling authority in all matters connected with the administration of land, collection of government dues including land taxes, land revenue, preparation of land records and other matters relating thereto. The BoR is the custodian of the rights of the land holders and is the highest Revenue Court in the province with appellate/revisional jurisdiction against orders of subordinate revenue officers/courts including commissioners and collectors. All revenue officers and Revenue Courts are subject to the general superintendence and control of the BoR.

225. Three members of the BoR are ex-officio secretaries to the government. These secretaries are the secretary to government for the Revenue Department, secretary to the government for the Colonies Department and secretary to the government for the Consolidation of Holdings Department. The relevant members in charge of these departments are assisted by BoR secretaries who are ex-officio additional secretaries to government.

226. The system in Pakistan for the recording of rights and interests in land was originally established for the fiscal purposes of the government. The system is very old and has, with few modifications, maintained a record of rights and interests to assess land revenue and other levies.

227. The Punjab Local Government Ordinance 2001 made some fundamental changes to the role and responsibility of the BoR and its key staff. This ordinance devolved the staff working for the BoR Departments in the districts to the district administrations. The traditionally wide roles for key staff in BoR Departments in the districts were significantly narrowed and largely confined to the maintenance of the record of rights.

228. In addition to the three administrative departments mentioned above other functional units under the BoR include the following:

- Administration Wing
- Research & Gazetteer Cell
- Directorate of Land Records (an attached department of the Revenue Department)
- Settlement & Rehabilitation Wing
- Punjab Land Commission (Statutory Agency)
- Chief Inspectorate of Stamps.

### ***Broad Classification of Functions of Revenue Department With Reference to Service Delivery***

229. The main function of the department related to the program is the acquisition of private land including all compulsory land acquisition proceedings for public purposes conducted by functionaries of the Revenue Department. The other functions of the Revenue Department broadly cover the maintenance of records of rights; collection of agricultural income tax, water rate; facilitation of agricultural loans; registration of deeds; and resolution of record and tenancy related disputes.

230. The Colonies Department deals mainly with the administration and management of state land, including disposal, through sale, lease and exchange; transfer to provincial government departments free of cost for public purposes; and transfer to the federal government and autonomous bodies at market price plus 10 percent surcharge.

231. Similarly the Consolidation Department consolidates scattered holdings of landowners in compact blocks to make land-use more productive and meaningful; reduces the number of plots of land for the right holders of a revenue estate by consolidating scattered chunks of their land into minimum number of compact blocks; prepares an updated record of right holders for use by the Revenue Department/right holders; ejects illegal/unauthorized occupants of government state land and carves out new paths besides retaining old ones where necessary to improve communication between villages and also to earmark/reserve/provide tracts of land for general utility purpose/welfare such as graveyards, playgrounds, schools, health centers and new waterways for better irrigation with a view to achieve a maximum increase of productivity/cultivation.

### ***IE Development and Management Companies***

232. A brief summary of the PSIC, PIEDMC and FIEDMC as they relate to social aspects of the program is provided in the following sections.

233. **Punjab Small Industries Corporation.** The PSIC has been developed for the sustainable growth of small, creative and cultural industries now and for future socioeconomic development. The PSIC has the following objectives and functions:

- Development of industries through sectoral analysis and development of clusters
- Strengthening of clusters through survey and analysis, and design of requisite interventions
- Provision of land to small scale industries and creative and cultural industries in the clusters
- Subsidized credit to industries in industrial hubs and clusters
- Training in creative and cultural sector
- Marketing support to artisans
- Provision of feedback for HR development to concerned organizations on the basis of cluster analysis
- Provision of business plans and other advisory services and
- Policy advocacy

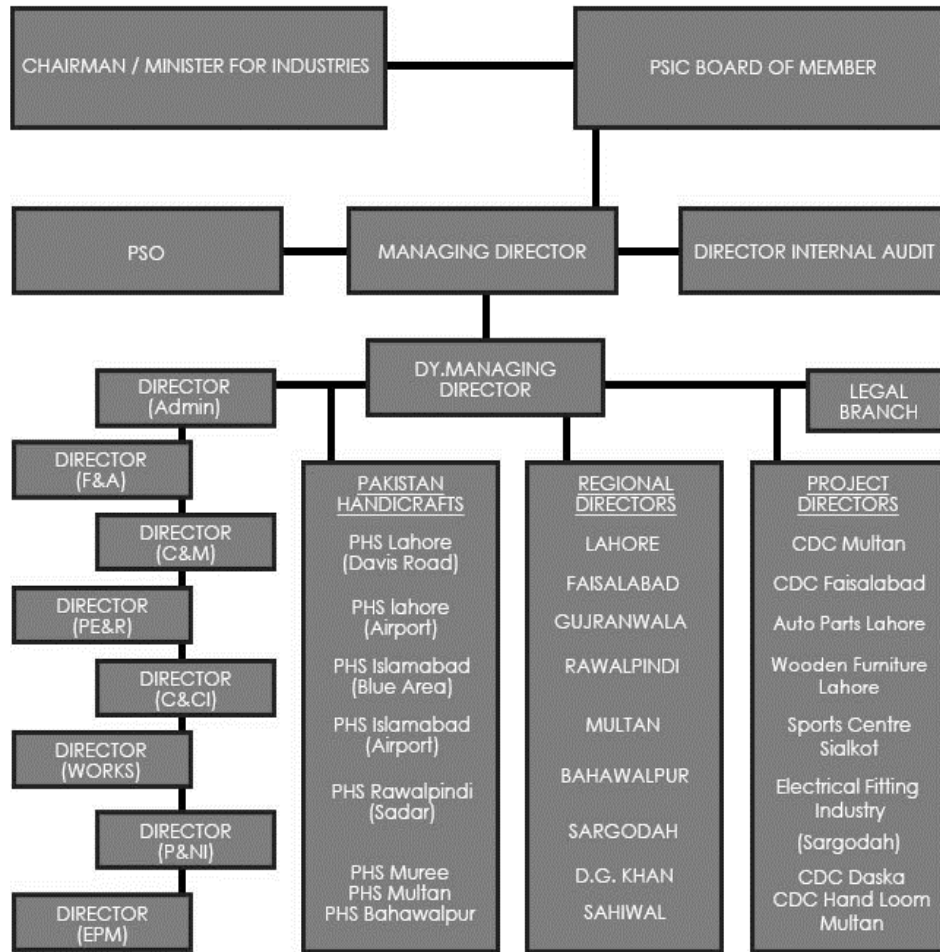
234. The organization chart of the PSIC is shown in Figure 5. The PSIC is headed by a chairman/minister of industries. There is a managing director supported by a deputy managing director who oversees the overall functioning of the corporation.

235. The organizational structure, among others, include a section related to Estate with a mandate for land related matters. This section is headed by director estate who handles and coordinates land acquisition and other land related matters with the Revenue Department. The process of land acquisition at the PSIC is based on LAA 1894, which includes the identification of the site by the PSIC and a subsequent request sent to the BoR for acquisition. Land is usually not acquired for IEs under the emergency land acquisition provision of LAA 1894 by the PSIC. Legacy land disputes claims do arise, such as those reported on the Gujrat IE. The claims are related to price escalation and have been under litigation for the last 4-5 years.

236. The PSIC has a planning process for new IEs. Feasibility studies are usually conducted by outsourced consultants. However, no environmental and social reports were made available or reported to be available from the PSIC.

237. With regard to management of social aspects of IEs, the PSIC has no specific setup or staff. There is no section or member of any section dedicated to social aspects. Should communities have complaints or grievances about any issues related to IEs or industries therein, there is no systematic GRM in place to address these issues. Common social infrastructure is provided by the IE for the industrial units including the canteen, dispensaries and first aid arrangements.

**Figure 5. Organization Chart of Punjab Small Industries Corporation**



238. **Punjab Industrial Estate Development and Management Company.** In 2003, the government of Punjab announced its industrial policy and the PIEDMC was established in pursuance of this industrial vision. The PIEDMC is a Section 42 company, incorporated under Companies Ordinance 1894. The company is owned by the government of Punjab and is run by a board of directors comprising of 16 directors. The majority of them are private sector industrialists and the rest are ex-officio members. The chairman and chief executive officer (CEO) are from the private sector and the day-to-day affairs are looked after by the CEO.

239. The PIEDMC was established to provide quality infrastructure and to ensure efficient, cost effective and sustainable management of IEs. New IEs at the PIEDMC are planned through a proper planning process. The site selection process follows set criteria and afterwards land acquisition is initiated. The feasibility studies and tender documents are mostly prepared by outsourcing these studies to consultants. Environmental and social assessment reports are prepared as a part of the feasibility studies and NOCs obtained from the EPD. Each industry's application is screened by the PIEDMC and then an NOC is issued for establishment of the industry within the IE.

240. During planning of IEs, the present as well as future land requirements for IEs are kept in mind. The area for future expansion is also earmarked but usually, due to shortage of funds, is not acquired. If government land is available then it is preferred for IE establishment, otherwise private land is acquired. The process for private land acquisition is based on LAA 1894 and follows its legal requirements. Compensation is paid based on market rate by Land Acquisition Collection. The PIEDMC has also acquired land for some IEs using the emergency provisions under Section 17 of LAA 1894. It was reported that non-titleholders are also compensated on case by case basis for the loss of structures and other assets by creating special provisions to minimize the delays in project execution.

241. Land-related litigation issues are reported by PIEDMC in almost all sites. In the Quaid-e-Azam Apparel Park, three cases were recently filed in the High Court. An informal negotiation based system of settling the grievances or land/compensation related cases is also followed by the PIEDMC. The informal process includes arranging a meeting and efforts to negotiate with the affected persons who have filed petitions. Mostly, this works effectively, issues are resolved and the affected persons typically withdraw cases following resolution. Where the cases are not withdrawn by the affected persons, the PIEDMC follows the legal procedure.

242. Each industry within the IE carries out its own Social and Environmental Assessment and obtains an NOC from the EPA. Industries within IEs are also required to follow the acts, regulations, and ordinances related to social aspects, such as the ECA 1991; the Protection against Harassment of Women at the Workplace, Rules, 2013 and other labor laws. The PIEDMC also encourages the development of facilities for women in its industries such as child care centers, prayer rooms, toilets, and so on. Labor is mostly hired from the surrounding community. Each industry hires its own labor, maintains a record and shares the details with the PIEDMC. Common social infrastructure is provided by the IE.

243. In the PIEDMC, Marketing, Finance, Engineering, and Human Resources are the main organizational departments. An Environmental and Social Management Section exists under the Engineering Department of the PIEDMC. At present the section is staffed by two professionals. The responsibilities of this section mainly include monitoring of water, wastewater, and air, and dealing with community complaints. If there are any complaints by the community related to pollution created by any industry, then the PIEDMC takes action through the relevant EPA. Trainings are also conducted by the PIEDMC for plantation and other environmental and social aspects.

244. **Faisalabad Industrial Estate Development and Management Company.** The FIEDMC was formally registered in 2004 under Companies Ordinance 1894 with the aim of promoting economic development through the establishment of IEs. It serves as a key government entity in developing and diversifying the economy of Pakistan through the creation of IEs. It has the following objectives:

- Provide congenial world class infrastructure to prospective entrepreneurs for setting up large scale industrial units, SMEs, warehouses and related commercial concerns to compete globally.
- Promote poverty alleviation through employment generation, provide conducive work environment to workers along with skill development.

- Promote exports in all fields of industry.
- Promote liaison between industry and the government.
- Upgrade the socioeconomic situation of the area.
- Attract foreign direct investments to Pakistan.

245. The FIEDMC has undertaken two projects of national importance, the VAC and the M-3 Industrial City (M-3 IC).

246. The VAC has been well acknowledged for its suitable land, affordable cost, advanced infrastructure, provision of all utilities at the door step of each industry and a full set of dedicated business support services. M-3 IC is the largest IE in Pakistan. Strategically located on Motorway M-3 South near Faisalabad, it provides an international level of infrastructure and is attracting massive local and foreign investments. The project is massive, comprising more than 4500 acres of land accommodating textile, pharmaceuticals, information technology, chemicals, automotive, and service complex, among others. At present, it is still only partially occupied (22 percent).

247. The FIEDMC has its own set of bylaws for industries related to building bylaws and has developed a guidebook which describes plot transfer, registration and other related procedures. A specific department exists within the institution to deal with land and estate matters.

248. There is no specific section within the FIEDMC to deal with social issues. A professional was hired by the FIEDMC to oversee environmental and social aspects, but the post is currently vacant. The FIEDMC needs institutional strengthening to improve social management of IEs and industries.

### ***Department of Archeology***

249. In October 2011 a new department was established, comprising youth affairs, sports, and archeology. The department was created with a vision of

- helping to build healthy and tolerant society through promotion of sports;
- conserving/preserving the cultural heritage of Punjab and developing it to have a healthy share in the economic growth of Punjab and Pakistan; and
- developing and promoting tourism in Pakistan to attract tourists to its historical and cultural heritage, provide entertainment and recreation facilities to the people, and spread benefits of tourism among the public for employment creation and poverty reduction with the ultimate aim of contributing to national economic growth.

250. The Archeology Department conducted a survey across Punjab from 1994 to 1996 to map out possible sites of archaeological significance. According to this survey, Bahawalpur, Rawalpindi and Multan districts have a high number of unprotected and unexcavated archaeological sites.

251. No procedures are available to share information on important or sensitive cultural heritage sites with construction companies/projects. However, under the law, chance finds should be reported to the Archeology Department within seven days. If ruins are discovered, then all construction work must be stopped. In this case, the Archeology Department conducts a site assessment and looks for signs of buildings or habitation.

252. The department has a total of 611 staff. The main office of the department is in Lahore with a satellite office located at Lahore Fort. Subdivisional offices are located in Jhelum and Bahawalpur. Subregional offices are in Taxila and Multan and a site office is located at Harappa (Sahiwal).

### ***Labor Department, Punjab***

253. The Labor Department, Punjab was established with the mission of “Promoting the Welfare and Protecting the Rights of Labor Force and Workmen.” It is concerned with the following:

- Promoting healthy labor management and industrial relations for greater socioeconomic progress and development;
- Protecting the rights of workmen and labor force;
- Laying equal stress on their housing, health, safety and protection to make them more committed to their work;
- Preventing child and bonded labor, keeping in view national and international standards;
- Exercising effective control over weights and measures

254. The Punjab Labor and Human Resource Department, consists of the following wings:

- Secretariat
- Directorate General of Labor Welfare
- Punjab Employees Social Security Institution
- Punjab Workers Welfare Board
- Minimum Wages Board
- Labor Courts

255. Although a comprehensive set of labor laws exists, there is a dire need to improve enforcement, especially in the case of minimum wages, child labor, and registration of labor, social security and control of bonded and contract labor. The department has 36 District Labor Officers in Punjab with designated roles and responsibilities. The department requires strengthening with regard to human resources and logistics required by the professionals to

improve compliance like provision of adequate transport facilities. The DVCs have been established in districts of the Province of Punjab but these committees are not fully functional. These committees have been constituted under the subsection (1) of section 13 of the Bonded Labor System (Abolition) Rules, 1976. The department is presently conducting and computerizing the results of labor survey using android platform. The results of the labor survey are expected to be regularly updated on the website of the Labor Department.

### ***Women Development Department***

256. Women Development Department was established in April 2012, under ‘Punjab Women Empowerment Package 2012’ announced on International Women's Day that year. This policy document comprises multiple reforms in legal, administrative and institutional spheres while providing new initiatives to safeguard women’s rights and is expected to transform the socioeconomic status of women by expanding opportunities available to them. The Women Development Department is mandated to lead the province toward women’s empowerment and gender equity, following Punjab Women Empowerment Package. Specific functions and responsibilities have been assigned to the department through amendments to the government of Punjab Rules of Business, 2011.

257. According to the government of Punjab Rules of Business 2011, the policy includes the following:

- **Safeguarding women’s rights.** Provision of ways and means to effectively safeguard women’s rights within the constitutional and legal framework to improve these guarantees not only in letter and spirit but also to introduce new legislative framework where and when required.
- **Expanding opportunities.** Expansion of opportunities to improve the socio-politico-economic status of women with a special focus on rural areas.

258. The function of the department under the government of Punjab Rules of Business, 2011 are the following:

- Legislation, policy formulation and sectoral planning for women’s development.
- Transformation of the government into an organization that actively practices and promotes gender equality and women’s empowerment.
- Implementation of administrative and institutional reforms and departmental restructuring for promoting gender equality.
- Mainstreaming a gender equality perspective across public policies, laws, programs, and projects by departments and agencies of the government with a focus on women’s empowerment.
- Promotion, coordination and monitoring of execution of federal and provincial policies and commitments on gender reforms and women development.



- Provision of technical support and expertise for gender mainstreaming in all departments of the government and its agencies.
- Expansion of investment in women's sociopolitical and economic development to achieve the goal of gender equity.
- Collection of quantitative and qualitative data and research on the status of women in Punjab to highlight issues in appropriate fora.
- Building of partnerships with line departments, civil society organizations and NGOs to deliver on the rights and entitlement of women.
- Pursuance of means and measures to increase participation of women in the political process and encouragement of effective representation of women in political and administrative spheres.
- Collaboration with legal, judicial, law enforcement and other relevant governmental agencies and NGOs to facilitate women's access to formal legal and justice system.

259. The department is headed by a secretary, assisted by a deputy secretary who, in turn, is assisted by the section officers for program, budget and finance, and law. The department is actively working on several projects related to welfare of women, including the establishment of child care centers through Punjab Day Care Fund. Other programs are related to working women's hostels, scooters for women and so on. The department also expressed willingness to collaborate with the Bank to facilitate the establishment of child care centers for IEs.

## SECTION 5: COMPARATIVE ANALYSIS OF BORROWER SYSTEMS AND BANK POLICY CORE PRINCIPLES

### Introduction

260. This section provides an assessment of the extent to which the applicable systems are consistent with the core principles and key planning elements expressed in the Bank policy on PforR (OP 9.0). It also provides a review of aspects where gaps exist between the two.

261. Generally, the applicable environmental and social management systems at the federal and provincial levels are considered to be appropriate and comprehensive with only a few gaps in relation to the principles of the ESSA. The scope of the legal and regulatory systems is adequate to address underlying environmental and social risks, therefore, no significant changes to the overall structure of these management systems are required or proposed. The details of the comparative analysis are included below and a detailed matrix of findings and recommendations is attached in annex 3 at the end of this report.

### Core Principle 1:

**262. Environmental and social management procedures and processes are designed to (a) avoid, minimize, or mitigate against adverse impacts; (b) promote environmental and social sustainability in program design; and (c) promote informed decision making relating to a program's environmental and social effects.**

#### ***1.1 Bank program procedures are backed by an adequate legal framework and regulatory authority to guide environmental and social impact assessments at the programmatic level***

263. The current environmental and social legal system of Punjab and Pakistan supports the environmental and social assessments of projects under the mandatory requirement of conducting the EIA of the proposed project. The main act related to the EIA in Punjab is PEPA 1997 (amended 2012) which is a fairly comprehensive legislation and provides a legislative framework for protection, conservation, rehabilitation, and improvement of the environment. However, the capability of regulatory institutions for environmental and social monitoring is considered to be low which results in low integration of environmental and social assessment during implementation of projects.

#### ***1.2. Incorporate recognized elements of environmental and social assessment good practice, including the following:***

##### ***1.2a Early screening of potential effects***

264. A screening process is in place based on provisions in Schedules I and II of Review of IEE and EIA Regulations, 2000. The guidelines for preparation and review of the EIA report specify the scoping of important issues at an early stage.

##### ***1.2b Consideration of strategic, technical, and site alternatives (including the 'no action' alternative)***

265. The guidelines for preparation and review of environmental reports under section 2.6 mandates the analysis of different alternatives including the ‘no build’ option. There is often a high degree of reluctance to critically evaluate alternatives from an environmental and social point of view or to carry out any significant modifications to project location or design at this stage. Although the site alternatives are required to be assessed before finalizing site selection, it has been observed that this analysis is mostly done in retrospect to justify the site already selected, without actual consideration of the environmental and social aspects.

*1.2c Explicit assessment of potential induced, cumulative, and transboundary impacts*

266. Most IEEs/EIAs are conducted for site-specific spot analyses. Determination of cumulative environmental impacts is not covered by the scope of IEE/EIA. Data on ambient conditions such as status of air pollution and pollution levels of receiving water bodies are collected under the IEE/EIA, and impacts are determined for immediate surroundings. However, occurrence of cumulative impacts using air and water pollution dispersion modeling is not determined. Cumulative impacts determination is important for IEs and CETPs.

*1.2d Identification of measures to mitigate adverse environmental or social impacts that cannot be otherwise avoided or minimized*

267. The guidelines for the preparation and review of environmental reports include the assessment of environment, social, health, economic, and fiscal impacts under sections 3.7 to 3.9. Similarly, the sectoral guidelines for IEs issued by the EPA also specify the mitigation of environmental and social impacts, including compliance with the NEQS and addressing social inequities. Procedures for assessment of environment and social impacts are in place for development projects, however, actual implementation is usually only partial. Recommendations are provided in the reports but their implementation is limited to projects financed by multilateral and bilateral institutions only.

*1.2e Clear articulation of institutional responsibilities and resources to support implementation of plans*

268. Institutional responsibilities and resources for preparation, implementation monitoring, and inspection are clearly spelled out by relevant regulations (PEPA 1997 and PEPA 2012, Review of IEE/EIA Regulations, 2000). The mandate for monitoring implementation of IEE/EIA lies with EPA Punjab. The mandates for land acquisition and PCR have been vested with the BoR and Archeology Department, respectively. The mandate for implementation of labor laws is delegated to the Labor Department.

*1.2f Responsiveness and accountability through stakeholder consultation, timely dissemination of program information, and through responsive grievance redress measures*

269. Public consultation with relevant stakeholders, local authorities, representatives of communities and organizations directly affected by projects is required (Guidelines for Public Consultation). Public consultation generally is better in projects financed by multilateral and bilateral institutions. A complaint cell is active at EPA Punjab to address complaints by communities related to environmental and social aspects. GRMs are absent at program and policy level, where the only recourse is through the courts. GRMs are only implemented at the project level.

270. Although the timing and techniques for consultations are clearly stated in the guidelines, generally public consultation is carried out at two stages—during the socioeconomic and inventory surveys at the baseline data collection stage of the EIA and at the public hearing for the processing of EIA reports. GRMs need to be established at the program level as well as in IEs.

## **Core Principle 2**

**271. Environmental and social management procedures and processes are designed to avoid, minimize, and mitigate against adverse effects on natural habitats and physical cultural resources resulting from the program.**

*2.1 Takes into account potential adverse impacts on physical cultural property and, as warranted, provides adequate measures to avoid, minimize, or mitigate such effects.*

272. The IEE/EIA covers the profiling of natural habitats, flora and fauna species, national parks, important ecological areas, and impacts on downstream fresh water bodies. An impacts matrix of project components and activities during construction and operational phases of projects, including mitigation measures, is an essential part of an IEE/EIA. The EIAs conducted for IEs proposed by the PIEDMC and FIEDMC cover these aspects in detail, with recommendations partially implemented. In the case of the PSIC, IEEs/EIAs were not conducted. Under PEPA 2012, new IEs proposed by the PSIC should prepare the IEEs/EIAs.

273. The Pakistan Antiquities Act of 1975 was adopted by Punjab in 1985. The Antiquities Act 1975 only focused on conservation of monuments, whereas the Punjab law also includes conservation of the area surrounding it. The site screening guidelines with respect to historical sites are provided in the sectoral guidelines for IEs issued by the EPA as a part of EIA procedures.

274. Most governmental agencies are not aware of the act and ignore it during the planning process. A recent example of its use is the Orange Line Metro project currently being planned in Lahore. It was planned originally to be built in close proximity to the historic Shalimar Gardens but the Archeology Department objected to this route and the route is now being reevaluated.

275. As noted above, no procedures are available to share with construction companies/projects. However, under the law, chance finds should be reported to the Archeology Department within seven days. If ruins are discovered, then all construction work must be stopped. The department then conducts a site assessment.

## **Core Principle 3**

**276. Program procedures ensure adequate measures to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program and (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials.**

*3.1 Supports and promotes the conservation, maintenance, and rehabilitation of natural habitats; avoids the significant conversion or degradation of critical natural habitats, and if*

***avoiding the significant conversion of natural habitats is not technically feasible, includes measures to mitigate or offset impacts or program activities***

277. The protection of natural habitats and sensitive biodiversity areas is covered under IEE/EIA guidelines in line with the best international practices and protocols. In EIAs of most of the large projects in the northern areas of Pakistan, this is addressed. This aspect is important for the PSS and the proposed Kalar Kahar City in particular. The EIAs of existing IEs that covered this aspect found that it was of low significance as sites are typically already converted or degraded to a great extent. However, this may not be the case for future IEs in Punjab.

***3.2 Promotes community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure, or in carrying out activities that may be dependent on such infrastructure with safety measures, inspections, or remedial works incorporated as needed.***

278. This is addressed in the EMP, which is an essential part of an IEE/EIA. The IEE/EIA for an IE covers safe design, construction, and O&M for the whole project, including infrastructure, layout, land acquisition, community safety, and so on. Independent assessments are required for each industrial unit and building. Industry- and building-specific IEEs/EIAs cover community, individual, and worker safety in detail at each stage of project implementation. That said, implementation of the EMPs for IEs and specific industry units and buildings is generally limited.

***3.3 Promotes the use of recognized good practice in the production, management, storage, transport, and disposal of hazardous materials generated through program construction or operations; promotes the use of integrated pest management practices to manage or reduce pests or disease vectors; and provides training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions.***

279. The federal government promulgated the Hazardous Substances Rules 2003. These rules instruct the proponent of a project to adopt good production practices, management, storage, transport, and disposal of hazardous materials generated through program construction or operations and provide training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions. The DG of the EPA indicated that they are planning to review the rules based on the conditions in Punjab. In this regard, a diagnostic has been proposed by this program to be conducted by the EPA. Implementation is limited and the proposed program is designed to increase the capability of the EPA in this regard. The EIAs conducted for the PIEDMC and FIEDMC cover these issues in detail.

***3.4 Includes measures to avoid, minimize, or mitigate community, individual, and worker risks when program activities are located within areas prone to natural hazards such as floods, hurricanes, earthquakes, or other severe weather or climate events.***

280. These aspects are fully covered by an IEE/EIA, usually under a Disaster Management Plan (DMP), which is part of the environmental management included in the IEE/EIA reports. The DMPs prepared for the PIEDMC and FIEDMC cover these aspects satisfactorily, although implementation is mostly partial.

## **Core Principle 4**

**281. Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.**

### ***4.1 Avoids or minimizes land acquisition and related adverse impacts***

282. The main legal tool used for land acquisition in Punjab is LAA 1894 and Punjab Land Acquisition Rules of 1983. Rule 4 states, “On receipt of the application under Rule 3 the collector of the district shall examine its feasibility taking into consideration the genuineness of the public purpose involved, the minimum requirements of the acquiring agency, and suitability of the area proposed for requisition keeping in view its alternative uses if any.” However, performance in this regard varies and needs significant improvement.

### ***4.2 Identifies and addresses economic and social impacts caused by land acquisition or loss of access to natural resources, including those affecting people who may lack full legal rights to assets or resources they use or occupy***

283. LAA 1894 has clear provisions and procedures for compensation in this regard when it comes to land titleholders under its Sections 23 and 24. However, it does not cover non-titleholders. Social and legal issues have been reported in IEs related to land acquisition by the PIEDMC (Apparel Park), M3 (FIEDMC), and PSIC (Gujrat). Most cases are related to the determination of compensation rates. The use of Section 17 under LAA leads to further issues due to emergency acquisition of land without prior public consultation.

284. Compensation to non-titleholders apparently has been made through special provisions created for the Metro Bus Projects in Lahore and Rawalpindi. This has set a good precedent for future interventions. Similarly, the PIEDMC has also reported that in some cases payment to non-titleholders was made to remove project implementation bottlenecks.

### ***4.3 Provides compensation sufficient to purchase replacement assets of equivalent value and to meet any necessary transitional expenses, paid prior to taking of land or restricting access***

285. According to LAA 1894, compensation is paid for all assets at market value rather than replacement cost. The market value is determined by the DPAC. The process for the determination of market price relies on recent land sale transactions of similar nature in the nearby area. The market rates are also notified by the relevant deputy commissioner on an annual basis. Most of the legacy issues of the IEs are related to the market value determination of affected assets and lands.

### ***4.4 Provides supplemental livelihood improvement or restoration measures if taking of land causes loss of income-generating opportunity (for example, loss of crop production or employment)***

286. Livelihood restoration is not emphasized in LAA 1894 or Rules of 1983, which is a major gap.

287. The land acquisition process for Metro Bus Projects in Lahore and Rawalpindi included additional provisions for loss of business and project-affected people were provided a loss of business allowance. This practice needs to be adopted on a formal level.

***4.5 Restores or replaces public infrastructure and community services that may be adversely affected***

288. Public infrastructure is normally relocated by the relevant department.

**Core Principle 5**

**289. Due consideration is given to cultural appropriateness of, and equitable access to, program benefits, giving special attention to rights and interests of indigenous peoples and to the needs or concerns of vulnerable groups.**

***5.1 Gives attention to groups vulnerable to hardship or disadvantage, including as relevant the poor, the disabled, women and children, the elderly, or marginalized ethnic groups. If necessary, special measures are taken to promote equitable access to program benefits.***

**Indigenous Peoples/Ethnic Minorities**

290. Indigenous peoples are not found in Punjab; therefore, this aspect is not applicable to the program.

291. There is no clear reference to vulnerable people in LAA 1894 or Rules of 1983 and hence no specific provisions exist.

292. Exhaustive legal provisions on labor have been enacted in Pakistan and adopted by the government of Punjab as discussed elsewhere in this report. There is a need to enhance the participation of women as workers in IEs, which is only possible if positive measures are taken to provide a secure environment and safe transport. Pakistan acquired the status of EU's GSP+ which allows increased access for some categories of Pakistani products by allowing duty-free exports to EU markets from January 1, 2014. GSP+ requires ratification and compliance of 27 international conventions including 8 core labor standards of the ILO. The process of implementation of these Labor Conventions under GSP+ is currently slow and needs to be expedited.

**Core Principle 6**

**293. Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.**

***6.1 Considers conflict risks, including distributional equity and cultural sensitivities***

294. Local cultural and sensitivity issues are covered under requirements of environmental assessments, especially in projects financed by the Bank and other multilateral and bilateral institutions. There are currently no formal GRMs in IEs. There is a complaint cell in the EPA and informal systems exist. There is no formal system of public information sharing with local communities in existing estates.

## SECTION 6: STAKEHOLDER CONSULTATIONS

### Introduction

295. Stakeholder consultations were an integral part of the ESSA process and were carried out keeping in view similar principles and objectives of other Bank operations. This section of the ESSA highlights the consultation process, elaborating on the participatory approach, stakeholders, tools and techniques adopted, and major findings and recommendations from the key stakeholders. It also provides details pertaining to the Bank-sponsored multi-stakeholder workshop in Punjab on December 8, 2015.

### Summary of Stakeholder Meetings

296. The Bank-sponsored multi-stakeholder workshop in Lahore was held on December 8, 2015. Participants included a range of stakeholders from government, international organizations, academia, private sector, local government, and civil society. Participants expressed concerns over many aspects of the program. Concerns raised by the participants and the responses of the program team are summarized below:

- Participants appreciated that the ESSA has emphasized on compliance of existing environmental and social laws and regulations rather than proposing any changes.
- It was suggested that OP 9.0 be attached as an annex to the ESSA; accordingly OP 9.0 is attached as annex 7.
- The sustainability of the program was questioned after the withdrawal of Bank financing. It was explained that sustainability of the program has been considered as the top priority. Only a model which is economically and financially sustainable will be considered under the program. It was stated that for PPP models, the Punjab government will support capital expenditure; private competitors have to prove their eligibility for government through feasibility studies based on financial and economic sustainability. The program focuses on upgrading government systems for sustainable results. User fee models will be used to ensure sustainability.
- It was argued that social compliances and sustainability need to be embedded in the government system. The team responded that social units and labor cells have been essentially proposed by the program to work in close collaboration with the government departments to enhance overall social compliance and sustainability in Punjab. Social and labor units will also galvanize the institutions to work better to comply with eight core labor-related conventions required to be complied with under GSP+. This will emerge as a good practice and, moving forward, IEs are expected to value the utility in retaining these units.
- Participants commented that the focus of the program is more on the export industry; it was proposed that the large number of nonexporting industries should also be brought under the program's ambit. The team responded that the focus of the program is on IEs and SMEs. Most of the industries located in IEs are nonexporting. In addition, the program has designed a large training and extension



program for SMEs not located in IEs. TA will be provided to these SMEs in the areas of resource efficiency and environmental and social compliances.

- Participants suggested that for sustainable operations of CETPs serious commitment from the stakeholders is required. The team elaborated that owing to sustainability reasons the program has proposed to implement the CETPs under the PPP model. Under the PPP model conditions are placed to ensure that execution and operations of CETPs should be outsourced to competent international and national companies and member industries of IEs provide long-term commitment to pay a user fee. In addition, it is proposed that international companies should compete and demonstrate sustainability through feasibility studies.
- Participants inquired about the risks to the program in case of a change of government. The team explained that the system is devised in such a way that it is not prone to risk due to change of government.
- Participants commented that the role of civil society should be included in the monitoring of the program. The team agreed with the suggestion and responded that the civil society's role will be included in the results monitoring in the program description.
- Participants questioned the rationale behind proposing an ERMC; they argue that the capacity of existing laboratory needs to be enhanced. The DG EPA explained that the existing laboratory of the EPA needs substantial upgradation. In addition, the EPA is planning to conduct research and development activities for Punjab-specific legislative and technical issues in the future. The DG EPA concluded that the ERMC is proposed owing to these reasons.
- Participants emphasized that during implementation of the program, linkages of academia with industries and government should be strengthened. The team responded that consultations were done during ESSA preparation and ensured that it will be an ongoing activity during the program implementation. The EPA also mentioned that they always welcome students and they will continue this activity during the program implementation.
- The EPA identified that EPA offices and staff are present in all districts instead of only 16 districts as mentioned in the ESSA. The team agreed that this mistake will be corrected in the final version of the ESSA.
- Participants asked for the explanation on operations of proposed social units with the government departments. The team explained that social units will be established in the PSIC, PIEDMC, and FIEDMC and will work in collaboration with different departments like labor, women development, and others. These cells will be embedded in the culture of IEs.
- The issue of child labor was discussed in detail. The team explained that in addition to the ECA, there are several conventions ratified by Pakistan which do not allow the employment of children in any form. It was mentioned that there are four groups of conventions in GSP+ covering environment, labor, governance, and human rights.

Compliance with these conventions is required to retain GSP+ status. Complementarity between GSP+ and the recommendations of the ESSA was emphasized. Ensuring compliance with conventions can be used as an incentive to increase exports. Participants stated that it is the constitutional right of every child in Pakistan to get education, but due to unavailability of schools and poverty parents do not want to send children to schools because they want their children to earn. It was suggested that if the government enforces the minimum wage, there are possibilities that child labor will reduce. Discrepancies between conventions and national child labor laws are small and were also discussed and identified.

297. In the end, the participants were supportive of proposals presented by the program. They showed confidence that if the program is implemented as designed and stakeholders are kept in the loop, then the program will make substantial contributions in the implementation of the growth strategy of Punjab. The ESSA has reflected concerns raised by incorporating suggestions both within the text of the ESSA itself as well as in the more substantive recommendations and proposed actions. Detailed feedback from the consultation workshop is attached as annex 2 along with the list of participants.

## SECTION 7: RECOMMENDATIONS AND PROPOSED ACTIONS

### Introduction

298. This section includes a summary of the key measures that need to be taken during implementation for social as well as environmental aspects. In a broader context, measures are recommended to help the proponents improve their system performance and recommendations and to address important gaps between the proponent's systems and the PforR core principles and key elements.

299. These recommendations and proposed actions are focused on institutional strengthening with regard to capacity and finance; development of SOPs and improved enforcement of the regulatory framework and guidelines; undertaking of technical studies and development of sustainability frameworks. During the preparation and appraisal process for the PforR, specific agreements will be made with program counterparts on including these recommendations as core elements of the PAP. The recommendations and proposed actions are described in detail below.

### Social Aspects

300. The following recommendations have been devised based on the review of the present systems in place and their comparison with PforR principles and institutional arrangements for program implementation.

#### *Establishment of Cells to Work on Social Aspects*

301. There is a need to establish functional social and labor units in each of the industrial development and management institutions to work on social aspects with adequate human resources. Capacity-building programs for the implementing agencies with regard to government regulations on social management, labor issues, and safeguard procedures applicable to the program are also required.

302. The stakeholders subject to social capacity-building programs include the PSIC, PIEDMC, and FIEDMC.

303. The social and labor units will be mandated to (a) coordinate and assist with land-related aspects; (b) assist with compliance on labor, health, safety, and gender-related issues and maintain an effective liaison with the Labor Department, DVCs, and the Women Development Department; (c) ensure community consultation and implement safeguards related to vulnerable people; (d) operationalize the GRM setup; and (e) implement a public communication strategy.

304. Sustainability of the social side will emerge from embedding compliance oversight in the government system. Social and labor units will work in close collaboration with the relevant government department (Labor, Women Development, Revenue, Archeology Departments, and the EPA) and improve compliance. Social and labor units will also galvanize the institutions to work better to comply with the eight core labor-related conventions under GSP+. This will emerge as a good practice and, moving forward, IEs are expected to value the utility in retaining these units.

305. As described in section 2, the program key results, DLIs, and intermediate DLIs will be regularly measured and reported. The PRMP will have overall responsibility for coordinating, monitoring, and reporting on the program's results indicators and will conduct regular reporting on progress in each of the results areas. Other third-party entities will be charged with collecting and reporting more technically complex and/or sensitive results progress. Gender policies will be measured by the 'Women, Business, and the Law' Project unit of the Bank every other year. Progress on worker security and the prevention of child labor will be measured through independent audits.

#### ***Development of SOPs for Land Acquisition and Compensation***

306. The IEs should ideally buy land through willing buyer-willing seller arrangements. Additionally, they must develop SOPs for acquisition of land. The PforR will support the development of land acquisition and compensation procedures in relation to the IEs. This will include the process for assessing land prices in line with market rates, compensation for assets and livelihoods for landowners, tenants, and non-titleholders. There is precedent for such procedures under recent projects such as the Lahore and Rawalpindi Metro Bus projects and they will be incorporated into the SOPs. The key partner in this activity will be the BoR. However, it will be assisted by the social and labor units formed in IE development and management institutions. The social and labor units will undertake the development of SOPs in close collaboration with the BoR and assist in application of procedures for expansion and legacy cases. At each level, settlement commissions will be formed to negotiate and settle claims.

#### ***Development of SOPs for Social and Archeological Screening and Chance Find Procedures***

307. IEs will also be expected to develop SOPs for social and archeological screening criteria for site selection or expansion of existing estates and maintain liaison with the Archeology Department on the procedure for chance archeological finds.

#### ***Development of HSE SOPs and Improved Implementation of Bylaws***

308. IEs will also be expected to develop, notify, and implement SOPs covering the occupational, construction as well as community aspects related to HSE. The social units will take the lead in this aspect and work in collaboration with the Labor Department and EPA. The enforcement of bylaws relating to the establishment of industries and approvals of construction should also be improved by the IEs.

#### ***Improved Implementation of Stakeholder Consultations***

309. IE management companies will improve stakeholder and public consultation to make the process more inclusive, in accordance with the requirements of the Guidelines for Public Consultation by the EPA. These guidelines will be followed for planning and conducting meaningful consultation for each stage of the environmental and social assessment.

#### ***Improved Enforcement of Labor and Gender Related Laws***

310. In the enforcement of labor laws, the Department of Labor and the IEs will work in close collaboration. The social and labor unit at the company level will liaise closely with the existing DVCs on bonded labor and with the district labor officer to monitor and help create the

conditions for enforcement of existing laws. The social and labor unit will include staff working on issues related to women workers in IEs. In particular, the IEs will ensure that laws related to women's working conditions are carefully enforced. Each IE will also undertake initiatives to ensure a greater participation of women in the labor force. This will include provision of safe and reliable transport facilities for women workers and establishment of childcare facilities. Workable models of childcare such as those recently introduced by the Punjab Women Development Department will be assessed for technical, economic, and social viability and implemented at each IE. Such measures will ensure that IEs support an employment environment that is in line with labor laws and, especially, conducive to encouraging the employment of women. Working conditions will be monitored by the social and labor units in collaboration with the Department of Labor and industries established in IEs.

### ***Development and Implementation of a GRM***

311. In order to deal with public complaints or disputes within an IE, a GRM will also be developed and implemented. This will enable an IE to deal quickly, efficiently, and clearly with any complaints regarding its own facilities and functions as well as to resolve any complaints received from the surrounding community.

312. The main purpose of the GRM of the project is to put in place an appropriate mechanism whereby the aggrieved or affected individuals or communities, who believe that they have been affected by any act of the management or connected implementation system, are provided a fair opportunity to record and redress their concerns. The detailed objectives of the GRM will be:

- to establish an organizational framework to address and resolve the grievances of individuals or communities fairly and equitably;
- to provide enhanced level of satisfaction to the aggrieved party or person;
- to provide easy access to the aggrieved/affected individual or community for an immediate grievance redress; and
- to identify systemic flaws in the operational system of the project and suggest corrective measures for effective implementation.

313. The project will develop a multi-tier GRM with designated staff at the PIEDMC, FIEDMC, and PSIC. The IEs established by each of these institutions will appoint a Grievance Redress Officer (GRO) to deal with the grievances at the IE level. A grievance lodged by an aggrieved person/party at the first stage shall be seen by the GRO at IE level where the cause of grievance had occurred.

314. Under the GRM, Grievance Redress Committees (GRCs) will be established at the PIEDMC, FIEDMC, and PSIC which will look into all the grievance cases including those related to social issues. Each GRC will include:

- a representative from the PRMP, chair of GRC;
- head social unit/team leader Grievance Redress Cell, Secretary GRC; and

- representatives from civil society organizations/community.

315. The PRMP shall nominate an officer as the GRO to act as member of the GRCs at the PSIC, PIEDMC, and FIEDMC and deal with matters relating to complaints and grievances. GROs will also be appointed at the IEs and the relevant information should be displayed at a prominent place/notice board—the name of GRO with location, contact numbers/ mailing IDs, and address along with the specific visiting hours for hearing/receiving the grievance/complaints of the public.

316. The GRO PRMP will chair the GRC and the head of the social and labor unit or the team leader of the Grievance Redress Cell will act as secretary of the committee. The committee will meet at least once a month and provide decisions to resolve the issues at the end of the meeting. The committee may request the complainant to attend and present his/her case. However, any aggrieved person will have the right to register her/his case for resolution by the court, in case he or she is not satisfied with the decision of the GRC.

317. Any complaint from the community related to any of the project's interventions that is formally submitted to the GRO at IEs will be addressed by the GRO at the IE within 15 days at the field level in consultation with the two designated representatives of civil society organizations/community. Whereas a complaint of an aggrieved party/community that relates to the IE staff, will be lodged with and addressed by the GRCs at the PSIC, PIEDMC, and FIEDMC which is responsible to address the issue to the full satisfaction of the aggrieved person or party within 15 days. All redress will depend upon the nature of complaint whereas responsibilities to hear and resolve issues/complaints will be assigned to the designated officers at all these levels.

318. The GRM will be communicated widely by the social and labor unit, among both the staff and communities through the use of electronic and print media among stakeholders.

319. Further, a public communication strategy will be developed and implemented so that IEs are better integrated within the local area and can disseminate information on their operations.

### ***Disbursement Linked Indicator***

320. The proposed DLI for social measures is compliance with the GSP+ labor conventions.

321. The program includes a series of activities designed to support the contribution of Punjab to Pakistan's commitments related to GSP+ labor conventions. Pakistan was accorded GSP+ status in 2013, which provided Pakistan duty-free access to the EU market. The program will support the reform of labor laws to complete legal compliance with the eight ILO labor conventions according to Pakistan's GSP+ commitment. These reforms will in particular facilitate employment of women by industry. For example, the program will support changes to regulations—revisions to the Factory Act which contains obsolete provisions restricting the employment of women in factories. The program will also build the policy advocacy capacity of the Women Development Departments.

322. The DLI will reward the following activities: legal gap analysis between ILO conventions and relevant laws and the introduction of android-based inspection reforms, draft laws prepared to make them compliant with the eight ILO/GSP+ conventions, extensive stakeholder

consultations on the proposed amendments and approval or, if outside the control of the Executive Branch of the Punjab, submission of the revised draft laws to the approval of the relevant fora (for example, Punjab's Provincial Assembly).

### **Environmental Aspects**

323. DLI5 includes the presentation of three PPP CETP projects to the PPP Steering Committee and to have one CETP operational by the end of the program. The program also includes the strengthening of the EPA—through the establishment of an ERMC in Lahore which will be a legal covenant.

324. This will help close a fundamental gap in the system as a matter of urgency, so that the EPA has the capability to monitor compliance of IEs, focusing first on export-led industries such as tanneries, textiles, and apparel. To do this, the EPA will establish an ERMC by the end of 2018 that will consist of a certified laboratory with trained staff to test and develop a database of emissions from these industries, so as to determine their compliance with the relevant applicable standards and conditions stated in environmental clearance certificates.

325. The government is securing US\$3.6 million funding through the Project Concept-I process to reinforce the monitoring and enforcement capacity of the EPA/EPD. In addition the government will need to carry out the following activities:

- Award of two main contracts. By the end of 2016, the EPA will need to award the following: (a) design contract for the design of a certified laboratory, including specifications for civil works and laboratory equipment and bidding documents for supply of equipment and development of the operational plan for the laboratory (b) supply contract for the supply of the specified laboratory equipment, including a maintenance contract and supply of materials for a medium term, of no less than five years.
- If the EPA chooses to perform these services as one design, build, and supply contract, the following two steps: (a) preparation of bidding documents for the design, build, and supply contract and (b) award of the design, build, and supply contract, including a maintenance contract and supply of materials for a medium term, of no less than five years.
- Trained and certified staff in place with contracts for a minimum of five years.

326. Furthermore, to support implementation and achievement of DLI5 and supporting recommended actions, additional TA activities, listed in table 13, are required. These include (a) preparation studies and bidding documents to modernize the MIS; (b) HR capacity assessment, development of training curriculum, and completion of training for identified technical staff at all levels; (c) inventory of industrial solid and hazardous waste for the major cities of Punjab; (d) prefeasibility study of sanitary landfills for the major cities of Punjab; (e) prefeasibility study of industrial hazardous waste management and safe disposal facilities; and (f) preparation of industry-specific pollution abatement standards for Punjab.

327. Lastly, to further ensure broader system wide strengthening, two additional significant measures are being proposed: (a) the adoption of a SF by the IEs and their members and (b)

CEEP for SMEs located outside IEs. These two measures will not be DLIs but will still be supported by TA. The industries will be required to adopt and implement the SF that will over time transform the IEs into more modern eco-industrial parks. The SF will bind the IEs to implement the following actions:

- **Legal compliance.** The IEs and member industries comply with all the relevant legislation on the establishment and operations of the IEs.
- **Maximized resource efficiencies and money saved.** Design and operation of the IEs to reduce, recover, and recycle resources, while reducing production costs and increasing business revenues.
- **Collaborative business opportunities.** Industries working together to achieve synergies (for example, supply chain, shared utilities, waste and byproduct exchanges between companies) and associated cost savings.
- **Smarter design and operation of IEs.** Efficient design and operation of IEs to reduce risks and infrastructure costs and facilitate effective resource movements within and to/from the IEs.
- **Minimize short- and long-term risk.** IEs designed and operated to minimize business, environmental, and social risks.
- **Meet government requirements and community expectations.** Ensure the short-term and long-term license-to-operate of the IEs through a collaborative industry, government, and community approach.

328. The expectation is that during the lifetime of the proposed PforR operation and certainly within the first two years, the SFs for all of the industries should be prepared and all the actions in the SFs should be completed by the end of the PforR operation.

329. The TA activities listed in table 13, will support the industries to develop these frameworks by facilitating the implementation of the SFs in close consultation with the EPA and to conduct trainings and organize dissemination seminars for the officials of IE management companies, member industries, and officials of the EPA, Industry Department, and P&D Department.

**Table 13. Recommended Actions**

Activity	Implementing Agencies	Timeline for Completing Activity	Activity Cost (US\$, millions)	Baseline Values (Early October 2015)	2020 Target Values (including disbursement for measurement of achievement of PforR-eligible results stemming from each activity area)
<b>TA-financed Activities</b>					
Prepare studies and	EPA	2016–2017	0.25	Rudimentary	Output-based;



Activity	Implementing Agencies	Timeline for Completing Activity	Activity Cost (US\$, millions)	Baseline Values (Early October 2015)	2020 Target Values (including disbursement for measurement of achievement of PforR-eligible results stemming from each activity area)
bidding documents for a modernized MIS				system and not effective	completed bidding documents for purchase of equipment and specialized training for information technology staff at the EPA
Establish an ERMC in EPA Punjab at Lahore with fully equipped certified laboratory and systems for compliance monitoring of environmental licenses	EPA	2016–2018	2.2	Partially functional laboratory exists that needs complete revamp	Office space and structure made available by the EPA; qualified staff hired; old laboratory equipment upgraded and new procured; ERMC laboratory fully functional; ERMC establishes system of lab testing referrals and completes three diagnostic studies on strategic issues. Established capability to test, analyze, and develop a database of emissions data from specific export industries, starting with tanneries.
HR capacity assessment, development of training curriculum, and completion of training for identified technical staff at all levels	EPA	2016–2018	0.25	2015 capacity assessment	Trained and certified staff, with capacity to operate the ERMC and perform three other key functions of the EPA.
Preparation of industry-specific environmental quality standards for Punjab	EPA	2016–2017	0.25	None	Adoption of standards
Public Sector Environmental Training and Dissemination	Project Management Unit	2016–2020	0.15	Understanding of PEPA 2012 and its requirements	About 1,000 officials of the government of Punjab sensitized, mobilized, and trained

Activity	Implementing Agencies	Timeline for Completing Activity	Activity Cost (US\$, millions)	Baseline Values (Early October 2015)	2020 Target Values (including disbursement for measurement of achievement of PforR-eligible results stemming from each activity area)
Project				and environmental issues is low among all levels of government departments	on environmental legislation and issues. At least the training shall reach three tiers of government departments.
Inventory of industrial solid and hazardous waste for the major cities of Punjab	EPA	2016–2018	0.20	Rudimentary information available	Study leads to further steps of feasibility and project development
Prefeasibility study of sanitary landfills for the major cities of Punjab	EMC	2016–2018	0.15	Some scanty studies and works available	Study leads to further steps of feasibility and project development
Prefeasibility study of industrial hazardous management and safe disposal facilities	EMC	2017–2019	0.15	Scanty data available	Study leads to further steps of feasibility and project development
<b>Subtotal for<sup>21</sup> above activities</b>			<b>3.6</b>		
Development, adoption, and implementation of SFs for IEs	Industry Department, PIEDMC, FIEDMC, PSIC; SIE (Small IE) BOMs in each IE	2017–2020	1.50	Generic SF of all IEs, SFs of SIE and QIE available for replication and implementation	All IEs develop SF; 8 major IEs successful in implementing SF; 10% decrease in water consumption; 10% decrease in energy consumption and carbon emissions; zero emissions of heavy metals; 30% solid waste reused and recycled; and improved occupation, health, and safety performance of industries and estates.
CEEP for SMEs located outside IEs	Project Management Unit/Cleaner Pro Centers	2017–2020	1.50	Well-tested knowledge, technologies and solutions exist in	In total, 2,000 SMEs engaged and mobilized by the project for CP and energy efficiency

<sup>21</sup> Total EPA Project Concept 1 activities =.US\$3.15 million

<b>Activity</b>	<b>Implementing Agencies</b>	<b>Timeline for Completing Activity</b>	<b>Activity Cost (US\$, millions)</b>	<b>Baseline Values (Early October 2015)</b>	<b>2020 Target Values (including disbursement for measurement of achievement of PforR-eligible results stemming from each activity area)</b>
				Pakistan for large and medium leather, textile, sugar, and paper industries	solutions. SMEs reduce 5% of energy and carbon emissions and 10% water and resources consumption. Improvement in occupational, health, and safety performance
<b>Subtotal</b>			<b>3.0</b>		
<b>Development Cost for CETPs</b>					
Two CETPs	Industry Department/IE Companies	2016–2023	50.00	Primary treatment for Kasur Tannery Cluster is operational with partial success and only 1% of industrial wastewater is treated	The government of Punjab and IEs' companies reach an agreement for the financing of CETPs. Long term financial mechanism developed and operational for the financing of CETPs in the province. Two additional IEs mobilized for implementation of CETPs under demonstration impact.
<b>Subtotal</b>			<b>50.0</b>		
<b>TOTAL</b>			<b>55.9</b>		

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## Annex 2: Summary of Stakeholder Engagement and Consultations

### PROGRAM-FOR-RESULTS

#### Punjab Jobs and Competitiveness

#### Environmental and Social Systems Assessment (ESSA) - Consultation Workshop Feedback

Sr. No.	Comment By	Comment	Response
1.	Sustainable Development Policy Institute	Compliance with the regulation has been emphasized in the ESSA. This is a good aspect of the ESSA.	Just a comment.
		OP 9.0 to be attached as an annex to the ESSA.	It was agreed that OP 9.0 will be attached as an annex to the ESSA.
		What will be the sustainability of the program after withdrawal of financing?	It was explained that the sustainability issue has been considered as the top priority. Only a model which is economically and financially sustainable will be considered under the program. For PPP models, the government will support capital expenditure. To prove their eligibility for government support, private competitors have to demonstrate financial and economic sustainability through feasibility studies. The program focuses on upgrading government systems for sustainable results. User fee models will be used to ensure sustainability.  Sustainability of the social side will come from embedding the compliance in the government system. Social units and labor cells will work in close collaboration with the government department and improve compliance. It is possible that while moving forward, IEs will retain these cells. These cells will galvanize government institutions to be work better.
		Program should not focus only on export-led industry but all industries in Punjab.	It was explained that the program is focusing on all industries in IEs.
		How CETPs will be sustainable after the completion of financing period. A serious commitment from the stakeholders is required.	It was elaborated that sustainable models will be used for operations of CETPs such as the user fee models. In addition, the sustainability has to be demonstrated by the competitors through feasibility studies.
		The ESSA mentions environmental SFs but these have not been attached.	It was agreed that information will be included in the ESSA.
		Risks to the program in case of change of government	The Bank explained that the system is devised in such a way that it

Sr. No.	Comment By	Comment	Response
		should be taken into account.	is not prone to risk due to change of government.
		Civil society should be included in the results monitoring (Page 15–16 of the ESSA).	It was agreed that civil society’s role will be included in the results monitoring in the program description.
		Instead of proposing a new ERMC, the capacity of the existing center should be enhanced.	The DG EPA explained that the existing laboratory of the EPA will be upgraded to the center.
2.	University of Punjab	Consultation and linkages of academia, industries, and government were emphasized.	It was mentioned that consultation was done during ESSA preparation and ensured that it would be an ongoing activity during the program implementation. The EPA also mentioned that they always welcome students.
		Improvement of PEPA 2012 can be made on the basis of research carried out by University of Punjab students.	The question was directed to the EPA. The DG EPA responded that they are open to suggestions and the University of Punjab can share their recommendations with them.
		The EIA should be done before start of construction. Design and implementation consultants should preferably not prepare the EIA of the project to avoid conflict of interest.	The question was directed to the EPA. The DG EPA responded that bigger consulting organizations have different sections for designs and environmental assessments and therefore it may not cause conflict of interest. It was also added that the problem was mainly related to engineering, procurement, and construction contractors who take the lead and perform all tasks themselves.
3.	EPA	The EPA staff are present in all districts instead of only 16 districts as mentioned in the report and presentation.	It was mentioned that the correction would be made in the report.
		The baseline environmental data should be presented in the ESSA like existing wastewater quality and quantity, resource utilization, loads on CETPs, and so on.	It was mentioned that the wastewater quality data is already included in the report. Air quality data and solid waste data is not available.
4.	Urban Unit	Instead of proposing a new ERMC, the capacity of the existing center should be enhanced.	Existing laboratory of the EPA will be upgraded to the center.
		Can the Cleaner Development Mechanism (CDM) be used for this program?	It was explained that industries like sugar mills, steel industries, and refineries mostly qualify for the CDM. The industries in the IEs are not emission intensive and, therefore, the application of the CDM will not benefit the program.
		Guidelines for selection of consultants should be distributed to all stakeholders.	It was mentioned by the DG EPA that all guidelines have already been uploaded on the website. If required, the EPA can also directly provide a copy.
5.	National Engineering Services Pakistan	Establishment of the social units and its association with the government department was discussed.	It was explained that cells will be established in the PSIC, PIEDMC, and FIEDMC and will work in collaboration with different departments such as Labor, Women Development, and so on. These cells can be embedded in the culture of IEs.
6.	Lahore	All recommendation are policy level	The mechanism was explained in the response to the comment.

Sr. No.	Comment By	Comment	Response
	University of Management Sciences	recommendations. How will the social units be made operational?	
		IEs construction on agriculture land has not been highlighted in the ESSA.	It was informed that this aspect has already been highlighted in the report.
		Air, noise, and water pollution issues are not mentioned in the report.	Already responded in the previous question.
		Enforcement and M&E mechanisms should be highlighted more.	It was explained that the project is focusing on compliance and enforcement is adopting a carrot-and-stick approach. The BOMs of IEs will have the representation of women and capacity of the EPA will be strengthened.
8.	Shirkatgah	The alternatives of treatment technology of CETP should be discussed.	It was explained that alternatives have already been discussed in the ESSA.
9.	PSIC	It was stated that all environmental and social compliances will be ensured by the PSIC while establishing IEs in future.	Just a comment and commitment by the PSIC to ensure compliance.
10.	PIEDMC	The PIEDMC accepted the responsibility of the Sundar incident and assured compliance in future.  The PIEDMC mentioned that the company has no legislation power or authority to stop any noncompliance of construction, environment, and social aspects.	It was mentioned that the PIEDMC bylaws have these provision. There was also a commitment by the PIEDMC to ensure compliance.
11.	All Pakistan Textile Mills Association	The association mentioned some good industrial cases as sustainable production centers (focusing on material flow management, energy conservation, renewable energy, water conservation, and so on. These sustainable production centers have shown a system for improvement of compliance with social standards. It was highlighted that unregistered industrial units are the biggest threat.	The Bank mentioned that one option could be to offer some support to the unregistered units as incentive after registration.
12.	Labor Department	Employment of children was discussed at different types of workplaces. The Labor Department has conducted a survey and has enrolled children in schools. In addition, it was also stated that if children were earning, then their parents were reluctant to send them to the schools even if free education was provided to them.	It was explained that in addition to the ECA, there are several conventions ratified by Pakistan which do not allow the employment of children in any form. It was mentioned that there are four groups of conventions in GSP+ covering environment, labor, governance, and human rights. Compliance with these conventions is required to retain GSP+ status. Complementarity between GSP+ and the recommendations of the ESSA was emphasized. Ensuring compliance with conventions can be used as an incentive to increase exports.



Sr. No.	Comment By	Comment	Response
			<p>There is a constitutional right to education and it was mentioned that the main reason for not sending children to schools was the unavailability of schools. It may not be correct to conclude that parents do not want to send children to schools because they want their children to earn.</p> <p>It was also mentioned that if a minimum wage was implemented, child labor would reduce. It was also discussed that the discrepancies in conventions between national child labor laws are small.</p>
13.	Lahore Development Authority	<p>It was mentioned that there are no qualified town planners in the PIEDMC due to which the factory collapse occurred.</p> <p>NOCs are not refused by the EPA and it should be made compulsory for housing schemes.</p>	<p>It was mentioned that the building control department in the PIEDMC had qualified town planners and architects. The EPA explained that several cases have not been granted an NOC in the recent past and the NOC for housing schemes are mandatory.</p>

## Annex 3: Environmental and Social Risk Matrix

### Environmental and Social Assessment and Action Plan Summary

<b>Core Principle 1: Environmental and social management procedures and processes are designed to (a) avoid, minimize, or mitigate against adverse impacts; (b) promote environmental and social sustainability in program design; and (c) promote informed decision making relating to a program’s environmental and social effects.</b>			
<b>Key Elements</b>	<b>System Requirements</b>	<b>Key Findings</b>	<b>Recommendations</b>
<p>1.1 Bank program procedures are backed by an adequate legal framework and regulatory authority to guide environmental and social impact assessments at the programmatic level.</p>	<p>The current legal system of Pakistan supports the environment and social assessments of projects as a component of the EIA. The main act related to the environmental and social assessment in Punjab is PEPA 1997 (amended 2012) which is a fairly comprehensive legislation and provides a legislative framework for protection, conservation, rehabilitation and improvement of the environment.</p> <p>The ‘environment’ has been defined in the act as (a) air, water, and land; (b) all layers of the atmosphere; (c) all organic and inorganic matter and living organisms; (d) the ecosystem and ecological relationships; (e) buildings, structures, roads, facilities, and works; (f) all social and economic conditions affecting community life; and (g) the interrelationships between any of the factors specified in subclauses (a) to (f).</p> <p>The salient features of the law are:</p> <ul style="list-style-type: none"> <li>• no proponent of a project shall commence construction or operation unless he has filed with the provincial agency designated by the provincial EPAs an EIA, and has obtained an approval;</li> <li>• establishment and formation of the PEPC;</li> <li>• prohibition of certain discharges or emissions;</li> <li>• NEQS for wastewater, air emissions, and noise; and</li> <li>• law also empowers the provincial government to issue notices and to enforce them for the</li> </ul>	<p>The capability of regulatory institutions for environment and social monitoring is low which results in low integration of environment and social assessment at the implementation stage of projects.</p>	<p>Need to integrate environment and social screening at the program level.</p> <p>There is a need to strengthen the EPA and other line departments of the government through training, conducting diagnostic studies, and establishment of the ERMIC.</p> <p>There is a need to establish social and labor units to work on social aspects with adequate human resources. A capacity-building program is required for the implementing agencies (PSIC, PIEDMC, and FIEDMC) on the government regulations on compensation and social management. Further SOPs are required on management of social issues.</p> <p>The stakeholders subjected to social the capacity-building program include:</p> <ul style="list-style-type: none"> <li>• PSIC</li> <li>• PIEDMC</li> <li>• FIEDMC</li> </ul> <p>These social units will be mandated to (a) coordinate and assist with land-related aspects; (b) labor- and gender-related issues and maintain an effective liaison with the DVCs and the Women Development Department; (c) ensure community consultation and implement safeguards related to vulnerable people; (d) operationalize the</p>

	<p>protection of the environment.</p> <p>The act was amended in 2012 under the 18th amendment which gives legislative power related to environment and ecology to the provincial governments from the federal government. The provinces are required to enact their own legislation for environmental protection. Other minor amendments include increasing the penalty cost for violations.</p> <p>Other legal instruments related to the environment and social assessment are as listed below:</p> <ul style="list-style-type: none"> <li>• Pak-EPA Review of IEE and EIA Regulations, 2000</li> <li>• EIA procedures by EPA including: <ul style="list-style-type: none"> <li>○ Guidelines for preparation and review of environmental reports</li> <li>○ Guidelines for public consultation</li> <li>○ Sectoral guidelines for IEs</li> </ul> </li> </ul>		<p>GRM setup; and (e) implement the public communication strategy.</p>
<p>1.2. Incorporate recognized elements of environmental and social assessment good practice, including the following: 1.2a Early screening of potential effects</p>	<p>A screening process is in place based on provisions in Schedule I and II of Review of IEE and EIA Regulations, 2000. Schedule I lists the projects requiring the IEE and Schedule II lists the projects requiring the EIA based on thresholds specified in terms of type of project, cost, capacity, location, and so on.</p> <p>The guidelines for preparation and review of the EIA report specifies the scoping of important issues at an early stage. The guidelines specify scoping as “Scoping is a vital early step, which identifies the issues that are likely to be important during the environmental assessment and eliminates those that are not.” The identification of important issues includes the social and economic aspects based on the definition of the environment.</p>	<p>Although the list of subprojects allows for screening of projects that can be key national works, there are no clear guidelines for screening with reference to the social aspects.</p>	<p>The program should include a simple social screening criteria for the projects under the program. All projects will need to be screened at an early stage of project preparation.</p>

<p>1.2b Consideration of strategic, technical, and site alternatives (including the 'no action' alternative)</p>	<p>The guidelines for preparation and review of environmental reports under its section 2.6 mandates the analysis of different alternatives including the 'no build' option.</p> <p>Among different alternatives, locational alternatives often include an assessment of the present land use, social setting of the area, people to be displaced, number of structures affected, and distance of the IE from project population boundary. These social elements are specified in the sectoral guidelines for the IE.</p>	<p>There is often a high degree of reluctance to critically evaluate alternatives from an environmental and social point of view or carry out any significant modifications to project location or design at this stage.</p> <p>Although the site alternatives are required to be assessed before finalizing the site selection, it has been observed that this analysis is mostly done in retrospect to justify the site already selected without actual consideration of the environmental and social aspects.</p>	<p>The implementation of the assessment of alternatives with respect to the environmental and social aspects needs to be strengthened.</p>
<p>1.2c Explicit assessment of potential induced, cumulative, and transboundary impacts</p>	<p>Most of the IEE/EIA are conducted under spot analyses. Determination of cumulative environmental impacts is not covered by the scope of the IEE/EIA.</p> <p>International transboundary impacts are not relevant to the project. However, interprovincial transboundary impacts of IEs are not yet identified by any of the provinces. Probability of such impacts is also low.</p>	<p>Data on ambient conditions such as status of air pollution and pollution levels of receiving bodies are collected under the IEE/EIA and impacts are determined for immediate surroundings. However, occurrence of cumulative impacts under air and water pollution dispersion modeling are not done.</p>	<p>Provisions of cumulative impacts of air and water pollution should be made part of the IEE/EIA scope.</p>
<p>1.2d Identification of measures to mitigate adverse environmental or social impacts that cannot be otherwise avoided or minimized</p>	<p>The guidelines for the preparation and review of environmental reports include the assessment of environmental, social, health, economic, and fiscal impacts under sections 3.7 to 3.9. Similarly, the sectoral guidelines for IEs by the EPA also specify the mitigation for the environmental and social impacts such as social inequities.</p> <p>The assessment mandates to focus on the demographic, cultural, and sociocultural impacts under the section related to social impacts. Other sections relate to the health, economic, and fiscal impacts.</p>	<p>Procedures for the assessment of environment and social impacts are in place for the development projects; however, its actual implementation is not done. Mostly the recommendations are provided in the environmental assessment report but their implementation is limited to the projects financed by the multilateral and bilateral institutions only.</p>	<p>The implementation should be strengthened by enhancing institutional capacities of the relevant institutions through establishing social units within each partner institution and at the IE level.</p>
<p>1.2e Clear articulation of institutional responsibilities</p>	<p>Institutional responsibilities and resources for preparation, implementation monitoring, and</p>	<p>The IEE/EIA section of the EPA reviews the IEE/EIA and</p>	<p>Capability strengthening needs to be done.</p>

and resources to support implementation of plans	inspection are clearly spelled out by relevant regulations (PEPA 1997 [2012], Review of IEE/EIA Regulations, 2000). The mandate for monitoring the implementation of the IEE/EIA lies with EPA Punjab.	accordingly issues the NOC. EPA Punjab's capability for post-NOC monitoring is limited.	
1.2f Responsiveness and accountability through stakeholder consultation, timely dissemination of program information, and through responsive grievance redress measures	<p>Public consultation with relevant stakeholders, local authorities, and representatives of communities and organizations directly affected by projects is required (guidelines for public consultation).</p> <p>Aspects of the public consultation are better in projects financed by Banks, and other multilateral and bilateral institutions.</p> <p>GRM is absent at the program and policy level except the legal course through courts. GRM is only implemented at the project level.</p>	<p>Although the timings and techniques of consultations are clearly stated in the guidelines, generally public consultation is carried out at two stages, that is, during the socioeconomic and inventory surveys at the baseline data collection stage of the EIA and during public hearing during the processing of EIA reports.</p> <p>In consultations conducted during the government of Punjab projects, the objective outcomes of consultation are not met because in most cases these are conducted under pressure from the higher level of government.</p> <p>Meanwhile, affected people are aware of their rights to complaints and the legal course to follow and get compensations for the damage caused by construction. It is also a motivation to push contractors to comply with environmental obligations.</p>	IE development and management companies will improve stakeholder and public consultation to make the process more inclusive in accordance with the requirements of the guidelines for public consultation by the EPA. These guidelines will be followed for planning and conducting meaningful consultation for each stage of the social assessment.
<b>Core Principle 2: Environmental and social management procedures and processes are designed to avoid, minimize, and mitigate against adverse effects on natural habitats and physical cultural resources resulting from the program.</b>			
<b>Key Elements</b>	<b>System Requirements</b>	<b>Key Findings</b>	<b>Recommendations</b>
Includes appropriate measures for early identification and screening of potentially important biodiversity and cultural resource areas	The scope of the IEE/EIA covers the profiling of natural habitats, flora and fauna species, national parks, important ecological areas, and impacts on downstream fresh water bodies. An impacts matrix of project components and activities during construction and operational phases of the projects is	The recommendations stated in the EIAs were mostly partially implemented. In the case of the PSIC, IEEs/EIAs were not conducted. Under PEPA 2012, new IEs proposed by the PSIC should	<p>The PSIC should be sensitized and mobilized to conduct IEEs/EIAs of proposed IEs.</p> <p>The EPA needs to be strengthened for post-NOC monitoring. The government of Punjab line departments need to be trained on</p>

	<p>an essential part of an IEE/EIA. Accordingly, the EIA requires that the project should include mitigations to avoid such impacts. The EIAs conducted for IEs proposed by the PIEDMC and FIEDMC cover these aspects in detail.</p> <p>The main legislation on conservation of archeological heritage is the Pakistan Antiquities Act of 1975. This act was adopted by Punjab in 1985. The Antiquities Act 1975 only focused on conservation of a monument whereas the Punjab law also includes conservation of the area surrounding the monument. The site screening guidelines on the historical sites are also provided in the sectoral guidelines for IEs issued by the EPA as a part of EIA procedures.</p>	<p>prepare IEE/EIAs.</p> <p>Most governmental agencies are not aware of the act and ignore it during the planning process. A recent example is provided by the Orange Line Metro project currently being planned. The metro was planned originally to be built in close proximity to the Shalimar Gardens but the Archeology Department objected to this and the route is now being reevaluated.</p> <p>The Archeology Department conducted a survey across Punjab in 1994-1996 to map out possible spots of archeological significance. According to this survey, Bahawalpur, Rawalpindi, and Multan Districts have a high number of unprotected and unexcavated archeological sites.</p> <p>No SOPs are available to share with construction companies/projects. However, under the law, chance finds should be reported to the Archeology Department within 7 days. If ruins are discovered, then all construction work must be stopped. In this case, the Archeology Department conducts a site assessment and looks for signs of buildings or habitation.</p>	<p>environmental law and issues.</p> <p>Inventory of archeologically significant sites needs to be prepared for the Province of Punjab by the Archeological Department and shared with all the line departments of the government of Punjab.</p> <p>SOPs should be prepared for project execution parties regarding chance find of archeologically significant sites not mentioned in the inventory of archeologically significant sites.</p>
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<p>Supports and promotes the conservation, maintenance, and rehabilitation of natural habitats; avoids the significant conversion or degradation of critical natural habitats and if avoiding the significant conversion of natural habitats is not technically feasible, includes measures to mitigate or offset impacts or program activities.</p>	<p>This aspect is covered under IEE/EIA guidelines in line with the best international practices and protocols.</p>	<p>In the EIAs of most of the large projects in the northern areas of Pakistan, this aspect is taken care of. This aspect is important for the PSS and the proposed Kalar Kahar City. The EIAs of existing IEs covered this aspect and it was found that it is of low significance. This might not be case of future IEs in Punjab.</p>	<p>The project ensures that during the implementation of the PSS and Kalar Kahar City this aspect is taken care of based on PEPA 2012 and its guidelines.</p>
<p>Takes into account potential adverse impacts on physical cultural property and, as warranted, provides adequate measures to avoid, minimize, or mitigate such effects.</p>	<p>The main legislation on conservation of archeological heritage is the Pakistan Antiquities Act of 1975. This act was adopted by Punjab in 1985. The Antiquities Act 1975 only focused on conservation of a monument whereas the Punjab law also includes conservation of the area surrounding the monument</p>	<p>Most governmental agencies are not aware of the act and ignore it during the planning process. A recent example is provided by the Orange Line Metro project currently being planned. The metro was planned originally to be built in close proximity to the Shalimar Gardens but the Archeology Department objected to this and the route is now being reevaluated.</p> <p>The Archeology Department conducted a survey across Punjab in 1994–1996 to map out possible spots of archeological significance. According to this survey, Bahawalpur, Rawalpindi, and Multan Districts have a high number of unprotected and unexcavated archeological sites.</p> <p>No SOPs are available to share with construction companies/projects. However, under the law, chance finds should be reported to the Archeology Department within 7 days. If ruins are discovered, then all construction work must be</p>	<p>Any proposed site for a new development such as an IE should be screened for possible impact on sites of archeological significance. Without proper screening damage can be caused during construction, for example, Lakhenjodaro in Sukkur is located inside an IE. It was discovered when the IE had been designated and plots were being cleared for industry. After the discovery, the area of archeological significance (2 plots) were left undeveloped and the area was surveyed and recorded by the Kahirpur University.</p> <p>Increase awareness about the Antiquities Act of 1975 among stakeholders and improve its implementation.</p> <p>Develop and implement SOPs related to the project screening with respect to its impacts on PCR. Use archeological considerations for siting of new IEs. Conduct site survey at selected site and implement procedure for chance finds.</p> <p>Develop and implement partnership with the Archeology Department for screening of extension. Implement SoPs for chance finds procedures.</p>

		stopped. In this case, the Archeology Department conducts a site assessment and looks for signs of buildings or habitation.	
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**Core Principle 3: Program procedures ensure adequate measures to protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the program and (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials.**

<b>Key Elements</b>	<b>System Requirements</b>	<b>Key Findings</b>	<b>Recommendations</b>
Promotes community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure, or in carrying out activities that may be dependent on such infrastructure with safety measures, inspections, or remedial works incorporated as needed.	This aspect is addressed in the EMP an essential part of the IEE/EIA. The IEE/EIA for an IE covers safe design, construction, and O&M for the whole project including infrastructure, layout, land acquisition, community safety, and so on. Independent IEE/EIA are required for each industrial unit and buildings. Industry- and building-specific IEEs/EIAs cover community, individual, and worker safety in detail at each stage of the project implementation.	Implementation of the EMPs for IEs and specific industry unit and buildings is predominantly limited	Punjab EPA capability for post-NOC monitoring of IEE/EIA implementation needs to be enhanced.  Capabilities of IE companies for local-level monitoring need to be enhanced.  Training of industrial units for the implementation of the EMPs.
Promotes the use of recognized good practice in the production, management, storage, transport, and disposal of hazardous materials generated through program construction or operations; promotes the use of integrated pest management practices to manage or reduce pests or disease vectors; and provides training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions.	The federal government promulgated the Hazardous Substances Rules 2003. These rules instruct the proponent of the projects to adopt good production practices, management, storage, transport, and disposal of hazardous materials generated through program construction or operations and provide training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions. After the 18th amendment, implementation of these rules has been delegated to EPA Punjab.	In the missions meetings with EPA Punjab, the DG stated that EPA Punjab is planning to review the rules based on the conditions in Punjab. Implementation of these rules is limited. The EIAs conducted for the PIEDMC and FIEDMC cover these issues in detail.	A diagnostic has been proposed by this program to be conducted by EPA Punjab. This program has also made provisions to increase the capability of EPA Punjab on the subject.



Includes measures to avoid, minimize, or mitigate community, individual, and worker risks when program activities are located within areas prone to natural hazards such as floods, hurricanes, earthquakes, or other severe weather or climate events.	These aspects of the proposed projects are fully covered by the scope of IEE/EIAs. In most of the IEE/EIAs these aspects are covered under the DMP which is part of the EMP of the IEE/EIA reports.	The DMPs prepared for the PIEDMC and FIEDMC cover these aspects satisfactorily. Implementation of the DMPs is mostly partial.	Increase the capability of IE companies to implement the EMPs and DMPs. Punjab EPA's enhanced capability for post monitoring of EIA implementation will also support in improving the opportunities for DMP implementation.
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**Core Principle 4: Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.**

Key Elements	System Requirements	Key Findings	Recommendations
Avoids or minimizes land acquisition and related adverse impacts	<p>The main legal tool used for land acquisition in Punjab is LAA 1894 and Punjab Land Acquisition Rules of 1983.</p> <p>The Punjab Land Acquisition Rules of 1983 under its Rule 4 states “On receipt of the application under Rule 3 the collector of the district shall examine its feasibility taking into consideration the genuineness of the public purpose involved, the minimum requirements of the acquiring agency, and suitability of the area proposed for requisition keeping in view its alternative uses if any.”</p>	Yes. This is followed up through the Punjab Land Acquisition Rules. However, the performance in this regard varies across the program and needs significant improvement.	
Identifies and addresses economic and social impacts caused by land acquisition or loss of access to natural resources, including those affecting people who may lack full legal rights to assets or resources they use or occupy	<p>LAA 1894 has clear provisions and procedures in this regard when it comes to land and titleholders. However, it does not cover people without titles.</p> <ul style="list-style-type: none"> <li>• Market value of land at the date of publication of notification under Section 4</li> <li>• Damage sustained, by reason of the taking of any standing crops or trees at the time of the collector's taking possession thereof</li> <li>• Damage (if any) sustained, at the time of taking possession of the land, by reason of severing such land from his other land</li> <li>• Damage (if any) sustained, at the time of taking possession of the land, by reason of the</li> </ul>	No compensation to non-titleholders (tenants with no legal document, squatters). However, special provisions were made in case of Metro Bus Projects for payment to non-title landowners.	The industries should either buy land through a willing buyer-willing seller arrangement or develop SOPs for acquisition of land in line with the principles of the ESSA. The PforR will support the development of land acquisition and compensation procedures in relation to IEs. This will include the process for assessing land prices in line with market rates, compensation for assets and livelihoods for landowners, tenants, and non-titleholders. There is precedence for such procedures under recent projects such as the Lahore and Pindi Metro Bus projects and such practices will be incorporated into SOPs for land acquisition

	<p>acquisition injuriously affecting his other property or his earnings</p> <ul style="list-style-type: none"> <li>• If in consequence of the acquisition of the land, the person interested is compelled to change his residence or place of business, the reasonable expenses (if any) incidental to such change</li> <li>• The damage sustained by diminution of the profits of the land between the time of the publication of the declaration under Section 6 and the time of taking possession of the land</li> <li>• 15% over and above the cost of the land determined by the collector as charges for acquisition. For land acquisition for companies, 25% is paid over and above the cost of the land determined.</li> </ul> <p>There are social and legal issues reported in IEs related to the land acquisition like the PIEDMC (Apparel Park), M3 (FIEDMC), PSIC (Gujrat). Most of these cases are related to the determination of the compensation rates.</p> <p>It has been reported that compensation to the non-titleholders has been made though special provisions created for Metro Bus Projects in Lahore and Rawalpindi.</p> <p>Similarly, the PIEDMC has also reported that in some of the cases the payment to non-titleholders was made to remove project implementation bottlenecks.</p>		<p>for IEs. The key partners in this activity will be BoRs. However, they will be assisted by a social unit formed in the PSIC, FIEDMC, and PIEDMC. This unit will also have staff at each IE site. The unit will spearhead the development of SOPs in close collaboration with the BoR and assist in the application of procedures in case of expansion of IE and settling legacy cases. At each company level, settlement commissions will be formed to negotiate and settle legacy claims.</p>
Provides compensation sufficient to purchase replacement assets of equivalent value and to meet any necessary transitional expenses, paid before taking of land or restricting access	<p>According to LAA 1894, compensation is paid for all assets at market value instead of replacement cost.</p> <p>The market value is determined by the DPAC. The process for the determination of market price relies on recent land sale transactions of similar nature in the nearby area. The market rates are also notified by the relevant deputy commissioner on an annual basis.</p>	<p>The compensation should be based on replacement cost. The price determination procedures need to be reviewed to ensure fair market price determination.</p>	As above
Provides supplemental	The livelihood restoration is not emphasized in the	The compensation for loss of	As above

<p>livelihood improvement or restoration measures if taking of land causes loss of income-generating opportunity (for example, loss of crop production or employment)</p>	<p>LAA 1894 and Punjab Land Acquisition Rules of 1894.</p> <p>Land acquisition provision for Metro Bus Projects puts in the following provisions for loss of business allowance:</p> <ul style="list-style-type: none"> <li>• The loss of business allowance shall be paid only to the person who is actually doing business at the site. Where a landowner is himself doing business, he shall be entitled to loss of business allowance. Where a tenant is doing business, he (tenant) shall be entitled to loss of business allowance.</li> <li>• Loss of business allowance shall be equal to one year rent of shops/hotels. For this purpose, higher of the amount of actual rent of one year paid by tenant or 12% of the cost of land assessed by the DPAC and approved by the BoR (without compulsory acquisition charges), shall be paid. Where business is being conducted by the owner himself, he shall be entitled to an amount equal to 12% of the cost of land (without compulsory acquisition charges). The amount shall be subject to the following conditions.</li> <li>• No loss of business allowance shall be paid to banks and telecom companies and for any hoardings/sky signs.</li> <li>• Where shops are situated on a level other than ground, that is, in basement, on first floor and above, the loss of business allowance at the rate of higher of 6% of cost of land (without compulsory acquisition charges) or the actual rent being paid shall be paid.</li> </ul>	<p>livelihood is not being allowed in LAA 1894. However, some recent good examples have been set up in the project by making payment for the loss of business allowance.</p>	
<p>Restores or replaces public infrastructure and community services that may be adversely affected.</p>	<p>The public infrastructure and community services are normally relocated by the relevant department.</p>		<p>As above</p>

**Core Principle 5: Due consideration is given to cultural appropriateness of, and equitable access to, program benefits, giving special attention to rights and interests of indigenous peoples and to the needs or concerns of vulnerable groups.**

<b>Key Elements</b>	<b>System Requirements</b>	<b>Key Findings</b>	<b>Recommendations</b>
Undertakes free, prior, and informed consultations if indigenous peoples are potentially affected (positively or negatively) to determine whether there is broad community support for the program.	The Bank has provided a clear definition of indigenous peoples. According to this definition, indigenous peoples are only found in Kalash. As Kalash is not in Punjab, therefore, this aspect is not applicable to the program.	n.a.	n.a.
Ensures that indigenous peoples can participate in devising opportunities to benefit from exploitation of customary resources or indigenous knowledge, the latter (indigenous knowledge) to include the consent of the indigenous peoples.	As above	n.a.	n.a.

<p>Gives attention to groups vulnerable to hardship or disadvantage, including, as relevant, the poor, the disabled, women and children, the elderly, or marginalized ethnic groups. If necessary, special measures are taken to promote equitable access to program benefits.</p>	<p>There is no clear reference to the vulnerable people in LAA 1894 and Punjab Land Acquisition Rules, 1983.</p> <p>The labor laws related to the working conditions, sexual harassment, and child labor are in place but their implementation is limited.</p> <p>IE management companies such as the PIEDMC and FIEMDC have their own set of bylaws but it is unclear if vulnerable groups are included in IEs.</p>	<p>IEs have no policy on disabled people.</p> <p>Women face problems in working conditions in IEs like inappropriate provision of separate toilets, absence of childcare facilities, and inadequate provision of transport facilities for women.</p> <p>Social protection and other legal conditions for labor need to be enforced. This includes the registration of the employees with the Employees Old Age Benefit Institution, social security, enforcement of other labor laws for working conditions, and sexual harassment in the workplace.</p> <p>Pakistan acquired the status of GSP+ which allows increased access to some categories of Pakistani products by allowing duty-free exports to EU markets from January 1, 2014. GSP+ requires ratification and compliance of 27 international conventions, including 8 core labor standards of the ILO.</p>	<p>In the enforcement of labor laws, the Department of Labor and the IEs will work in close collaboration. A labor cell will be established within the social unit at company level and within IEs to liaise closely with the existing DVCs on bonded labor and the district labor officer to monitor and help create the conditions for the enforcement of existing labor laws. In particular, the IEs will ensure that laws related to women's working conditions are carefully enforced. Each IE will also undertake initiatives to ensure a greater participation of women in the labor force. This will include provision of safe and reliable transport facilities for women workers and establishment of childcare facilities. Workable models of childcare such as those recently introduced by the Punjab Women Development Department will be assessed for technical, economic, and social viability and implemented at each IE. Such measures will ensure that IEs support an employment environment that is in line with labor laws and, especially, conducive to encouraging the employment of women. Working conditions will be monitored by the labor cell in collaboration with the Department of Labor and Industries established in IEs.</p>
<p><b>Core Principle 6: Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.</b></p>			
<p><b>Key Elements</b></p>	<p><b>System Requirements</b></p>	<p><b>Key Findings</b></p>	<p><b>Recommendations</b></p>
<p>Considers conflict risks, including distributional equity and cultural sensitivities</p>	<p>Local-level cultural and sensitivity issues are covered under requirements of environmental assessments especially in projects financed by the Bank and other multilateral and bilateral institutions.</p>	<p>No formal GRM in IEs. Informal systems do exist.</p> <p>No formal system of public information sharing with local communities in existing estates.</p>	<ul style="list-style-type: none"> <li>▪ Include an assessment of social conflict as one criterion for IE site selection</li> <li>▪ Develop, notify, and implement a GRM at each IE</li> <li>▪ Develop and implement a communication strategy</li> </ul>

## Annex 4: Typical Environmental Impacts of Industrial Estate and Mitigations - Operational Stage

<b>WASTEWATER IMPACTS</b>			
<b>Sources:</b> Sanitary and industrial wastewater			
<b>Common Parameters</b>	<b>Expected Concentrations of Effluent (mg/liter)</b>	<b>Concentration of Drain Effluent Before Discharge of Effluent (mg/liter)</b>	<b>Standards (mg/liter)</b>
BOD	350–700	135–200	80
COD	700–1400	200–400	150
TSS	300–600	07–14	200
<b>Potential Impacts</b>			
<b>Parameter</b>	<b>Impacts</b>		
pH	Growth inhibition of bacterial species (responsible for removing organic pollution) under highly acidic or alkaline conditions		
	Corrosion of water-carrying system and structures with acidic wastewaters having low pH		
	Malfunctioning and impairment of certain physicochemical treatment processes under highly acidic or alkaline conditions		
Organic pollutants	Depletion of DO levels, of the receiving water body, below limits necessary to maintain aquatic life (4–5 mg/liter)		
Suspended solids	Sedimentation at the bottom of water bodies leaving adverse impact on flora and fauna		
	Localized depletion of DO in the bottom layers of water bodies		
	Reduced light penetration in natural waters and consequent reduction in photosynthesis		
	Aesthetic nuisance		
Oil and grease	Reduced reaeration in natural surface bodies, because of floating oil and grease film and consequent depletion in DO levels		
	Reduced light penetration in natural waters and consequent reduction in photosynthesis		
	Aesthetic nuisance		
<b>Typical Mitigations</b>			
Construction of CETP at IE level and pretreatment plant at industrial unit level;			
Manage process wastewater through the following:			
<ul style="list-style-type: none"> <li>• Water consumption monitoring</li> <li>• Sanitary wastewater disposal through septic tanks</li> <li>• Treat process wastewater at unit level</li> <li>• Wastewater monitoring and reporting (monitor priority parameters at a frequency mentioned in SMART)</li> </ul>			
<b>Solid And Liquid Waste Impacts</b>			
<b>Major waste.</b> Depends upon the varying nature of industries in the IE.			
General waste expected from IEs: empty containers of lube oil and chemicals, metal scrap, discarded mechanical parts, and domestic solid waste.			
<b>Impacts</b>			
Nature of impact depends on the type of industries in the IE. However, general impacts would be the following:			
<ul style="list-style-type: none"> <li>• <b>Impacts on surroundings (soil contamination).</b> Pollutants deposited on land usually enter the human</li> </ul>			

body through the medium of contaminated crops, animals, food products, or water

- **Impacts on people.** Obnoxious odor due to bacterial action on biodegradable organic material cause illness to people living in, around, or close to estates (volatile organic compounds in air). Diseases include respiratory symptoms, irritation of the skin, nose, and eyes, gastrointestinal problems, psychological disorders, and allergies. (Journal of Sustainable Development in Africa (Volume 12, No.7, 2010).
- **Impacts on ground water** due to leaching of hazardous chemicals

**Mitigation Measures**

- Process waste
- Encourage the use of three R’s concept (reduce, reuse, and recycle the solid waste)
- Implement SWM system and conduct monitoring of the solid waste according to its source, type, and generation rate
- Sanitary landfill site
- Liquid waste
- Agreement with the major suppliers of lube oil to take them back after use

**AIR POLLUTION**

**Sources:** Generators/power plant, boilers, and vehicles

**Pollutants:** Carbon monoxide , nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), particulate matter, and sulfur oxides (SO<sub>x</sub>) if coal is used as fired fuel

**Impacts**

Parameter		Impact
<b>Particulate Matter</b>	E	Damage to plants by choking the leaf pores and restricting photosynthesis
		Global cooling of earth by reflecting back the solar radiation
		Impairment of atmospheric visibility, affecting transportation safety
		Deterioration of aesthetic quality of atmosphere, land, and water
		Soiling of materials, physical properties, and infrastructure
	HL	Increase in the frequency of respiratory infections such as bronchitis
<b>Carbon Monoxide</b>	HL	Heart attack by reducing the oxygen carrying capacity of blood
		Birth defects including mental retardation and impairment of fetus growth
		Dizziness, headache, and nausea
		Increase in reaction time of the drivers, a threat to road safety
<b>Oxides of Sulfur</b>	E	Chlorosis and plasmolysis in plants
		Damage to materials and property, by acid rains, resulting from oxidation of sulfur oxides to sulfuric acid, after reacting with water vapors
	HL	Serious lung damage, particularly in sulphate form
		Respiratory diseases such as chronic bronchitis
<b>Oxides of Nitrogen</b>	E	Formation of photochemical oxidants
		Damage to materials and property, by acid rains, resulting from oxidation of oxides of nitrogen to nitric acid, after reacting with water vapors
		Retardation of growth in plants
	HL	Reduction in oxygen-carrying capacity of blood
		Impairment of olfactory sense and night vision
		Dryness and roughness of throat
<b>Volatile Organic Compound</b>		Formation of photochemical oxidants
<b>Photo Chemical Oxidants</b>	E	Leaf discoloration and cell collapse in plants
		Damage to rubber, textiles, paints, and other materials
	HL	Severe eye, nose, and throat irritations
		Severe coughing and shortness of breath

*Note:* E = Environment; HL = Human health and life.

**Mitigation Measures**

- Process control of combustion chambers. The parameters to control are the uniform supply of fuel, control on air supply, and fine tuning of the combustion equipment and burners.
- Air emissions monitoring and reporting. Monitoring of priority parameters according to SMART rules.

Industrial estates falls under category 'A' of SMART for priority emission parameters.

**NOISE POLLUTION AND VIBRATION**

**Sources:** Plant noise, vehicular noise

**Impacts**

- Depends upon the noise levels and exposure to noise
- Review of literature indicates that noise has a series of health effects, in addition to hearing impairment

Grade of Hearing	Impairment	Audiometric ISO Value (dB)	Performance
0	No impairment	< 25	(Better ear) No or very slight hearing problem. Able to hear whispers
1	Slight impairment	26–40	(Better ear) Able to hear and repeat words in a normal voice at 1 m
2	Moderate impairment	41–60	(Better ear) Able to hear and repeat words using a raised voice at 1 m
3	Severe impairment	61–80	(Better ear) Able to hear some words when shouted into the better ear
4	Profound impairment	> 81	(Better ear) Unable to hear and understand even a shouted voice.

*Source:* (a) Based on World Health Organization (1991) and (b) International Organization for Standardization, average of 500, 1000, 2000, 4000 Hz

**General Impacts**

- **Hearing loss.** Exposure to sufficiently intense noise for long enough duration results in damage to the inner ear and thus decreases one’s ability to hear.
- **Acoustic trauma.** Acoustic trauma, which results from a single or relatively few exposures, is defined as “immediate organic damage to the ear from excessive sound energy.”
- **Physiological effects.** Exposure to noise can also lead to gastric changes. A study showed noise level above 80 dBA resulted in a reduction in stomach contraction strength and helped in ulcer development.

**Mitigations**

**Plant Noise Measurement**

Duration per Day (Hours)	Sound Level (dBA)
16	80
8	85
4	90
2	95
1	100
0.5	105
0.25	110
0.125	115

- Threshold limit values of the noise according to the American Conference of Government Industrial Hygienists
- **Audiometric testing.** An audiometer is used to measure the hearing threshold of employees.
- **Followup.** Follow-up monitoring of those employees having early stage of noise-induced hearing loss

**Engineering Control**

- Reduced at its source by enclosing the source, altering the acoustical design at the source, substituting with equipment that produces less noise, making alterations to the existing equipment, or changing the process so that less noisy equipment can be used
- Reduced along its path by moving the source farther away from receivers and improving the acoustical design of the path so that more sound is absorbed as it travels toward receivers



- Reduced at the receiver by enclosing the worker, using personal protective devices

## Typical Environmental Impacts of CETPs at Operational Stage

### Wastewater Impacts

Treated wastewater from CETPs will reduce the impacts associated with pH, organic pollutants, suspended solids, and oil and grease below the mentioned impact and will have a positive impact on environment and water.

Treated water can be reused for plantation and irrigation purposes if no hazardous chemicals are present in it.

Parameter	Impacts
<b>pH</b>	Growth inhibition of bacterial species (responsible for removing organic pollution) under highly acidic or alkaline conditions
	Corrosion of water-carrying system and structures with acidic wastewaters having low pH
	Malfunctioning and impairment of certain physicochemical treatment processes under highly acidic or alkaline conditions
<b>Organic pollutants</b>	Depletion of DO levels, of the receiving water body, below limits necessary to maintain aquatic life (4–5 mg/liter)
<b>Suspended solids</b>	Sedimentation at the bottom of water bodies leaving adverse impact on flora and fauna
	Localized depletion of DO in the bottom layers of water bodies
	Reduced light penetration in natural waters and consequent reduction in photosynthesis
	Aesthetic nuisance
<b>Oil and grease</b>	Reduced reaeration in natural surface bodies, because of floating oil and grease film and consequent depletion in DO levels
	Reduced light penetration in natural waters and consequent reduction in photosynthesis
	Aesthetic nuisance

### Air Pollution

#### Sources:

- Gas-fired generator: Carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), Sulfur dioxide (SO<sub>2</sub>)
- Aeration/biological tanks: inert gases such as carbon dioxide (CO<sub>2</sub>) and minor concentrations of nitrogen (N<sub>2</sub>), ammonia (NH<sub>3</sub>), and hydrogen sulfide (H<sub>2</sub>S) from the activated sludge process

#### Mitigations

- Air emissions monitoring and reporting. Monitoring of priority parameters according to SMART rules. Industrial estates falls under category 'A' of SMART for priority emission parameters
- Maintain a buffer zone in the wind direction by planting trees

### Solid Waste

Major solid waste streams are trash, sludge, and grit.

- **Trash.** Produced from a bar screen followed by an automatic fine screen before the lift station installed at the inlet of the CETP wastewater
- **Sludge and grit.** Grit chamber is proposed for primary treatment to remove the grit such as sand and heavy particles of silt.
- The grit will be produced at primary level and sludge from secondary level treatment.

- Grit to be produced from CETP (120,000 m<sup>3</sup> capacity): about 7.5–8 m<sup>3</sup>/d
- Sludge to be produced from CETP (120,000 m<sup>3</sup> capacity): from the secondary treatment system (1500 m<sup>3</sup>/d)

### Mitigations

For treatment of the sludge the following techniques are used:

- **Reuse techniques.** Reused for land application on agricultural or forestry land. The only limiting factor for its application is the presence of any toxic chemicals or heavy metals.
- **Product development.** The sludge may be processed to be converted into a commercial product (compost). By composting, the valuable nutrients can be recycled back to nature. The composting of the CETP sludge is cost-effective, easy to manage, and marketable. The limiting factors are toxic chemicals and heavy metals.
- **Disposal techniques.** The disposal options for the CETP sludge include mainly sanitary landfills and incineration.
- **Sanitary landfill.** This technique is used only when it is impossible to reuse the sludge. To use this technique for the CETP sludge, detailed analysis of its characteristics needs to be carried out. The geology and hydrology of the landfill site must be carefully examined.
- **Incineration.** The ash, produced during this process, needs to be properly disposed of, especially if heavy metal contents are present in it. This technique is capital-intensive and requires skilled workers for the operation. Moreover, air emission control and monitoring should be exercised for the stack emissions.

### Noise

**Plant noise.** Generated from the pumps and the aerators installed in the aeration tank of the activated sludge process.

**Impacts:** Depends upon the noise levels and exposure to noise.

### Mitigations

**Noise control measures for the equipment.** Proper maintenance and greasing of the noise producing equipment (pumps and aerators), enclosure of the noise producing equipment, and tree plantation at the boundary of the project site to curb noise level.

## OCCUPATIONAL HEALTH AND SAFETY

**Aerosols around the aeration tank.** Aerosols refer to suspension of tiny particles or droplets in the air, such as dusts, mists, or fumes. These particles may be inhaled or absorbed by the skin and can sometimes cause adverse health effects for workers.

**Impacts.** Health impacts of aerosol consist of both short-term acute symptoms such as asthma, bronchitis and so on, and long-term chronic irritation and inflammation of the respiratory track, development of lung cancer, and overall quality of life.

### Mitigations

Maintain a barrier of trees in the buffer zone to reduce dispersion of the air pollutants.

## Annex 5: Details of Land Acquisition Act 1894

1. The act is broadly grouped into 8 parts comprising 55 sections. The main relevant sections of LAA 1894 are presented below:

2. **Section 4 (Publication of Preliminary Notification and Powers of Officers Thereupon):** This section describes the process to be adopted for preliminary notification and states that whenever it appears to the provincial government that the land in any locality is needed or is likely to be needed for any public purpose, a notification shall be published in the official gazette. It would allow the collector to arrange for a survey of the land and submit a report to the commissioner not later than 60 days after the notification. Material/cutoff date for compensation and determination of market value shall be based on the date of notification. Before entry of any person in the property, the occupier shall be given at least seven days' notice in writing of his intention to do so.

3. **Section 5 and 5A (Notification that Particular Land is Needed for a Public Purpose for a Company and Hearing of Objections):** This section states that where land is to be acquired for a public purpose, if the commissioner, and where land is to be acquired, for a company, the provincial government, is satisfied after considering the result of the survey, if any, made under subsection (2) of Section 4, or if no survey is necessary, at anytime, that any particular land included in a locality notified under subsection (1) of Section 4 is needed for a public purpose or a company, as the case may be notification to that effect shall be published to the official gazette, stating the district or other territorial division in which the land is situated, the purpose for which it is needed, its approximate area and situation, and where a plan has been made of the land, the place where such plan may be inspected, and the collector shall cause public notice to be given of the land to be acquired.

4. Any person interested in any land which has been notified under Section 5 as being needed for a public purpose or for a company may, within 30 days after the issue of the notification, object to the acquisition of the land or of any land in the locality, as the case may be. Every objection as described above shall be made to the collector in writing, and the collector shall give the objector an opportunity of being heard either in person or by the pleader and shall, after hearing all such objections and after making such further inquiry, if any, as he thinks necessary, submit the case for the decision of the provincial government, together with the record of the proceedings held by him and a report containing his recommendations on the objections. The decision of the commissioner or the objections shall be final.

5. When land is needed for a company, the collector shall, after making such enquiries as he deems necessary, also make his recommendations to the commissioner with regard to the area that in his opinion is reasonable for the purpose. For the purpose of this section, a person shall be deemed to be interested in land that would be entitled to claim an interest in compensation if the land were acquired under this act.

6. **Section 6 (Declaration of Intended Acquisition):** According to Section 6, the Declaration of Intended Acquisition is published in the official gazette duly signed by the secretary to the government or some officer duly authorized to certify its orders, with location

details, approved area, and availability of the plan within six months of the publication of notification under Section 5.

7. **Section 7 (After Declaration Collector to Take Order for Acquisition):** Section 7 states that when the declaration is made under Section 6, the provincial/state government shall direct the collector to take an order for acquisition of land.

8. **Section 8 (Land to be Marked Out, Measured and Planned):** Section 8 directs that the collector shall then cause the land to be marked, measured and plan to be prepared if not completed under Section 4.

9. **Section 9 (Notice to Persons Interested):** This section deals with the notices to persons interested and states that the collector shall serve public notice to be displayed at convenient places on or near the land to be acquired, for possession of land and claims to be made to him. Notice should have particulars of land, date, and time for hearing/receiving objections/claims, which may be required in writing and signed by the party. Notice should also be served to occupier and to non-residents on their last known address.

10. **Section 10 (Power to Require and Enforce the Making of Statements as to Names and Interests):** This section states that the collector may also require any such person to make or deliver to him, at a time and place mentioned (such time not being earlier than 15 days after the date of requisition), a statement so far as may be practicable, the name of every other person possessing any interest in the land or any part thereof as coproprietor, subpropriator, mortgagee, tenant, or otherwise and of the nature of such interest, and of the rents and profits (if any) received or recoverable on account thereof for three years next preceding date of the statement. Every person required to make or deliver a statement under this section or Section 9 shall be deemed to be legally bound to do so within the meaning of Sections 175 and 176 of the India Penal Code.

11. **Section 11 (Enquiry and Award):** This section is related to the enquiry and award and specifies that on the fixed day, the collector shall proceed to any enquiry, regarding land area, compensation, and apportionment of compensation. Award should be made by the collector himself.

12. **Section 12 and 12A (Award of Collector When to be Final and Correction of Mistake):** Section 12 states that award shall be filed in the collector's office and shall, except as herein after provided, be final and conclusive evidence, as between the collector and the persons interested, whether they have respectively appeared before the collector or not, of the true area and value of the land, and the apportionment of the compensation among the persons interested. The collector shall give immediate notice of his award to such of the persons interested as are not present personally or by their representatives when the award is made.

13. Under Section 12A, any clerical or arithmetical mistake in the award arising therein from any accidental slip or omission may, at anytime, be corrected by the collector either of his own motion or on the application of any of the parties.

14. **Section 13 (Adjournment of Enquiry):** According to Section 13, the collector may for any cause he thinks fit, from time to time adjourn the enquiry to a day to be fixed by him.

15. **Section 14 (Power to Summon and Enforce Attendance of Witnesses and Production of Documents):** According to Section 14, for the purpose of enquiries under this act the collector shall have the power to summon and enforce the attendance of witnesses, including the parties interested or any of them, and to compel the production of documents by the same means, and (so far as may be) in the same manner as is provided in the case of a civil court under the Code of Civil Procedure.
16. **Section 15 (Matters to be Considered and Neglected):** This section states that in determining the amount of compensation, the collector shall be guided by the provisions contained in Sections 23 and 24.
17. **Section 16 (Power to Take Possession):** In accordance with Section 16, when the collector has made an award under Section 11, he may take possession of the land, which shall thereupon vest absolutely in the government, free from all encumbrances.
18. **Section 17 (Special Powers in Case of Urgency):** This section deals with the special powers in case of urgency and states that in case of urgency, whenever provincial/state government directs the collector, though no such award has been made, on the expiration of 15 days from the publication of the notice mentioned in Section 9, Subsection (1), take possession of any waste or arable land needed for public purposes or for a company. Such land shall thereupon vest absolutely in the government, free from all encumbrances. The collector at the time of taking possession shall offer compensation for standing crops and trees to persons interested (affected persons).
19. **Section 18–28A (Reference to Court and Procedure Thereon):**Part 3 of LAA comprises Section 18 to 28A as briefly described below:
20. **Section 18 (Reference to Court):** Section 18 states that any person who has not accepted the award may, by written application to the collector, require that the matter be referred by the collector for the determination of court within six weeks from the date of the collector’s award.
21. **Section 19 (Collector’s Statement to the Court):** This section deals with the collector’s statement to the court and states that in making the reference, the collector shall state for the information of the court, in writing regarding full land detail, names of the persons interested, amount for damages, and grounds of determining the compensation in case if there was objection to the compensation amount. There shall be attached a schedule giving the particulars of the notices served upon, and of the statements in writing made or delivered by, the parties interested respectively.
22. **Section 20 (Service of Notice):** Section 20 states that the court shall thereupon serve a notice specifying the day on which the court will proceed to determine the objection, and directing their appearance before the court on that day. The notice shall be served to the applicant, persons interested, and the collector if the notice relates to land or amount of the compensation.
23. **Section 21 (Restriction on Scope of Proceedings):** According to Section 21, the scope of the inquiry in every such proceeding shall be restricted to a consideration of the interests of the persons affected by the objection.

24. **Section 22 (Proceedings to be in Open Court):** This section declares that every such proceeding shall take place in open court, and all persons entitled to practice in any civil court in the provinces shall be entitled to appear, plead, and act (as the case may be) in such proceedings.

25. **Section 23 (Matters to be Considered in Determining Compensation):** Section 23 testifies that in determining the amount of compensation to be paid for land acquired under this act, the collector shall take into account the following:

- Market value of land at the date of publication of notification under Section 4;
- Damage sustained, by reason of the taking of any standing crops or trees at the time of the collector's taking possession thereof;
- Damage (if any) sustained, at the time of taking possession of the land, by reason of severing such land from his other land;
- Damage (if any) sustained, at the time of taking possession of the land, by reason of the acquisition seriously affecting his other property or his earnings;
- If in consequence of the acquisition of the land, the person interested is compelled to change his residence or place of business, the reasonable expenses (if any) incidental to such change;
- The damage sustained by diminution of the profits of the land between the time of the publication of the declaration under Section 6 and the time of taking possession of the land; and
- 15 percent over and above the cost of the land determined by the collector as charges for acquisition. For land acquisition for companies, 25 percent is paid over and above the cost of the land determined.

26. **Section 24 (Matters to be Neglected in Determining Compensation):** In accordance with Section 24, the following matters shall not be taken into consideration in determining compensation:

- The degree of urgency, which has led to the acquisition
- Any disinclination of the person interested to part with land acquired
- Any damage sustained by him which, if caused by a private person, would not render such person liable to a suit
- Any damage, which is likely to be caused to the land acquired after the date of publication under Section 6, by or in consequence of the use to which it will be put
- Any increase to the value of the land acquired likely to accrue from the use to which it will be put when acquired

- Any increase to the value of the other land of the person interested likely to accrue from the use to which the land will be put
- Any outlay or improvements made without the sanction of the collector after the date of the publication of the notification under Section 4

27. **Section 25 (Rules as to Amount of Compensation):** This section relates to the rules for establishing the amount of compensation in the situations when the applicant has made a claim to compensation, when the applicant has refused to make such claim or has omitted without sufficient reason and, when the applicant has omitted for a sufficient reason (to be allowed by the judge) to make such claim.

28. **Section 26 (Form of Awards):** This section states that every award shall be in writing signed by the judge, and shall specify the amount awarded. The award shall be deemed to be a decree and the statement of the grounds of every such award a judgment within the meaning of concerned sections.

29. **Section 27 (Costs):** This section declares that every award shall state the amount of costs incurred in the proceedings under this part, and by what persons and in what proportions they are to be paid. The costs shall ordinarily be paid by the collector, unless the court directs him for deduction from the applicants cost.

30. **Section 28 (Collector may be Directed to Pay Interest on Excess Compensation):** If the sum which, in the opinion of the court, the collector ought to have awarded as compensation is in excess of the sum which the collector did award as compensation, the court may direct that collector shall pay interest on such excess at the rate of eight per centum per annum from the date on which he took possession of the land to the date of payment of such excess into the court.

31. **Sections 29 and 30 (Apportionment of Compensation):** This part of the act comprises Section 29 and 30 related to particulars of apportionment to be specified and dispute as to apportionment.

32. **Sections 31 to 34 (Payment):** This part consists of Sections 31 to 34 relating to payment of compensation or deposit of same in court, investment of money deposited with respect to lands belonging to persons incompetent to alienate, investment of money deposited in other cases, and payment of interest.

33. **Sections 35 to 37 (Temporary Occupation of Land):** It consists of Sections 35 to 37 relating to the powers conferred to the collector under the act for temporary occupation of waste or arable land and payment of compensation.

34. **Sections 38 to 44 (Acquisition of Land for Companies):** This part of the act comprises Sections 38 to 44 pertaining to authorization of the company to enter and survey, industrial concerns to be deemed company for certain purposes, previous consent of provincial government, and execution of agreement necessary, previous enquiry, agreement with provincial government, publication of agreement, Sections 39 to 42 not to apply where government bound by agreement to provide land for companies, and how agreement with Railway Company be proved.



35. **Sections 45 to 55 (Miscellaneous):** This part of the act consists of Sections 45 to 55 relating to various situations.

## Annex 6: ESSA Methodology

1. The ESSA has been prepared by the Bank task team in accordance with the requirements of Bank policy PforR and associated Interim Guidance Note for PforR operations. Specifically, the ESSA was developed based on (a) a review of existing policies, acts, regulations, frameworks, and guidelines; (b) meetings and interviews with different stakeholders, particularly those involved in the environmental and social assessment as well as planning, implementation, and monitoring of IE projects; (c) an assessment of relevant environmental and social management systems relative to the PforR principles; (d) an assessment of the capacity and performance of institutions; (e) development of an action plan to enhance environmental and social management capacity and performance; and (f) development of recommendations. The formulation of the ESSA was informed by a consultative process involving key stakeholders. A consultation workshop was carried out in the provincial capital (Lahore) in December 2015 to better understand the environmental and social concerns of stakeholders and to seek feedback on the findings and recommendations of the ESSA team.

- (a) Ministry of Industry, “Evaluation of Industrial Environmental Management-Pakistan,” study was sponsored by the World Bank, 2010.
- (b) CPI, “Environmental Improvement in Pakistan: The Way Forward,” study was sponsored by the Embassy of the Kingdom of the Netherlands, 2013
- (c) CPI, “Generic Sustainability Framework for Industrial Estates in Pakistan,” study was sponsored by the Embassy of the Kingdom of the Netherlands, 2012.
- (d) CPI, “Sustainability Framework for Sundar Industrial Estates in Pakistan,” study was sponsored by the Embassy of the Kingdom of the Netherlands, 2012.
- (e) CPI, “Sustainability Framework for Quaid-e-Azam Industrial Estates in Pakistan,” study was sponsored by the Embassy of the Kingdom of the Netherlands, 2012.